

**THE  
RAILWAY GAZETTE**

A Journal of Management, Engineering and Operation  
INCORPORATING

Railway Engineer • TRANSPORT • The Railway News

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## DIESEL RAILWAY TRACTION

A Supplement illustrating and describing developments in Diesel Railway Traction is presented with every copy of this week's issue

## DISPATCH OF "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. The RAILWAY GAZETTE possesses the necessary permit and machinery for such dispatch, and any reader desirous of arranging for copies to be delivered to an agent or correspondent overseas should place the order with us together with the necessary delivery instructions.

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas, as they are stopped under the provisions of Statutory Rules & Orders 1939, No. 1440

With the object of conserving paper by avoiding the return of unsold copies, readers are advised in the interests of all concerned to place a regular order for THE RAILWAY GAZETTE either with their newsagent or direct with the Publisher

## A Plan for Post-War Transport

ARTICLES in the daily press, bearing the signatures of men eminent in various spheres, are so frequently disappointing in the material they contain that we have become a little apathetic to those which deal with railway and cognate matters. Too often these effusions bear all the marks of having been prepared on behalf of the eminent person under whose name they appear and on dissection consist too largely of platitudes to afford any useful indication of the inner thoughts of the authority whose signature they bear. Quite different is an article by Sir Ronald Matthews, Chairman of the L.N.E.R., which was published in *The Evening News* on April 6 as part of that newspaper's series "Undercurrents of War." Not only is this article a serious and authoritative contribution to those problems of post-war transport development which must bulk largely in the minds of the industry's leaders and to which attention has been drawn from time to time in THE RAILWAY GAZETTE; it may well prove a document of historic value as proffering at least the outlines of a plan put forward by the Chairman of the second largest unit of the railway system which forms the backbone of the transport industry of this country. So many points of interest and importance are contained in Sir Ronald Matthews's contribution that a summary is difficult without detracting from the value of his work.

\* \* \* \*

## Permanent Changes

Sir Ronald Matthews begins from the ground that many of the changes in transport wrought by the present war will become permanent with the return of peace. An opportunity for planning a complete system of national transport is afforded because the war has brought to a head the whole problem of wasteful competition between different and unco-ordinated agencies. He does not underestimate the problems which will face the industry with the return of peace; indeed he envisages them as likely to exceed those of 1919. The plan he puts forward visualises, immediately the war is over, the formation of a national transport committee under the chairmanship of the Minister of Transport and comprising representatives of rail, road, canal, coastal shipping, and air interests, charged with the task of bringing the transport of Britain into a co-ordinated whole. Every individual form of transport would handle the traffic for which it was best suited, and its economics would be so planned as to ensure revenue adequate for the maintenance of the highest degree of efficiency. The railways would remain the spinal-column of that system, for they alone could handle the mass passenger traffic and the bulk of heavy freight with maximum economy and efficiency; but Sir Ronald foresees a complete revision of road planning, and the establishment of main freight highways, independent of normal motorways, with road transport operating under regulations and rate standards similar to those of the railways. He has much of interest to say, too, on the places which will be occupied by other forms of transport. His is a statesmanlike basis on which may well be built an enduring, efficient, and economic edifice.

\* \* \* \*

## Progress of the North London Electrification Scheme

The first part of the programme for improving the railway services in North London was completed on July 9, 1939, when the Northern Line of London Transport and the L.N.E.R. tracks to High Barnet and Edgware were linked by two miles of new tunnel between Archway (Highgate) and East Finchley. Despite the difficulties of doing such work under wartime conditions, the running

of tube trains to High Barnet is beginning on Sunday next, April 14, only one month later than the date fixed before the war. Owing to the necessity of giving priority to engineering works of national importance, the proposed electrification of the L.N.E.R. line from Finsbury Park to Alexandra Palace and from Finchley Central to Edgware, together with the proposed tube extension beyond Edgware to Bushey Heath, have had to be postponed. Passengers for the City from the High Barnet line will not therefore be provided at this stage with the through service of City trains which was planned in the original scheme, but they will be able to change at East Finchley from tube to steam trains merely by crossing the platform, or at Euston from one tube train to the other at the same platform for Moorgate. There will be 11 steam trains (L.N.E.R. and L.M.S.R.) each way between East Finchley and King's Cross, Moorgate, or Broad Street in the peak hours. The service of steam trains between Alexandra Palace and King's Cross, Moorgate, and Broad Street will remain as at present, but when the new tube station is opened beneath the Highgate (L.N.E.R.) station in the summer, passengers from Alexandra Palace will be able to travel to the West End by changing at Highgate and descending an escalator.

\* \* \*

#### Canadian National Railways Results

Gross operating revenues of the Canadian National Railways for the year 1939 reached the highest figure since 1930, a total of \$203,820,186, and a gain of \$21,578,463 or 11.84 per cent. over 1938. In the operating expenses of \$182,965,768 there was an increase of only 3.8 per cent., and the operating ratio of 89.77 per cent. was the best since 1929. Operating revenues in 1938 fell short of meeting operating expenses by \$3,549,048 and there was nothing wherewith to meet interest charges, whereas in 1939 the amount available for this purpose was \$10,635,023. The final deficit in 1939 after payment of fixed and other charges (excepting charges to proprietor's equity under the provisions of the Canadian National Railways Capital Revision Act, 1937) was \$40,095,519 or \$14,218,676 less than in 1938. By no means all of the traffic advance in 1939 was attributable to the war; the increase was progressive throughout the year. In the first quarter, the total revenue was about equal to that of 1938, after which the quarterly increases were 11.9 per cent., 14.7 per cent., and 18.6 per cent. The largest wheat crop in ten years accounted for much of the freight traffic increase of \$20,485,407 or 14.6 per cent. Passenger revenue was, however, 1.5 per cent. lower.

\* \* \*

#### American Speed Competition

Memories of the competition in Great Britain which produced the Race to Edinburgh in 1888, and the Race to Aberdeen in 1895, not to mention such far more recent developments as the Coronation and Coronation Scot streamline services of 1937, are stirred by present-day happenings in the United States. In all directions on the North American Continent the keenest rivalry, often between three and even four companies, prevails for inter-city passenger traffic, in some cases over very considerable distances; and, although in virtue of "gentlemen's agreements," most of the accelerations are made simultaneously by the competitors to agreed minimum times, it is generally the energy of one competitor that forces the others to follow suit. The competition which has produced the very fast services between New York and Chicago, New York and Florida, Chicago and the Twin Cities, and Chicago and the Pacific Coast, has often been referred to in these columns; now the urge to speed up is breaking out in an

entirely new area in the south-west, comprising parts of the States Missouri, Kansas, Oklahoma, Texas, Louisiana, and Arkansas. It has begun by the projection of the diesel services of the Santa Fe Company, previously running between Chicago, Kansas City, and Wichita, as far south as Oklahoma City, in competition with the recently-introduced Rocket services of the Rock Island. This move has roused the St. Louis and San Francisco, or Frisco Lines, which from December 10, as detailed on p. 535, has recast its entire timetable, reducing its fastest times over the 379 miles between Kansas City and Oklahoma City at one cut from 12½ to 7¼ hr., and this with ordinary steam locomotives and standard stock.

\* \* \*

#### Passenger Tickets

The interest of the ordinary man in a passenger ticket is to see that he secures by it the cheapest rate and greatest facility for his journey. Otherwise, tickets do not generally concern him except when the conditions attached to them challenge his claim for damages for injury. There are, on the other hand, some passengers who take a deep interest in tickets. They desire to retain them as a record of pleasant travel on home and foreign journeys. Saving the precious cardboard or coupon from the grasp of the ticket-collector does also give something of a thrill, though it is fortunate for the peace of mind of booking clerks and accountants that comparatively few non-fraudulent passengers make this a regular practice. Apart, however, from these special enthusiasms, there are many features of interest connected with tickets, such as their history, and their form, and the different classes of ticket-printing machines. Articles have been published from time to time dealing with these particular aspects of passenger tickets, and legal questions affecting them have been treated fully in numerous legal text books. Professor Lionel Wiener's work, which we review on page 534, deals comprehensively and internationally with the whole subject of tickets used for many different forms of transport. Such a study, which we believe to be the first of its kind, should prove of considerable interest alike to the enthusiast and to the student of railway operation.

\* \* \*

#### "Waste in Distribution"

Since the introduction of steam power, production costs have constantly declined and the proportion of distribution costs in the price of the finished article has risen. Mr. George H. Scragg, Director of Advertising & Sales Promotion of the White Motor Company, of Cleveland, Ohio, in an address on "Waste in Distribution" to the Advertising Club of Boston recently, told his audience that 59 cents of the consumer's dollar were spent on distribution, whereas only 41 cents went in production costs. He did not give any indication of the split up of overhead costs, which, in some instances, has a considerable effect on the figures, as, for instance, in making New Zealand produce cheaper than English in London. There can be no doubt, however, that the modern type of industrial organisation in the United States, with its large scale specialised production, has been responsible both for the geographical concentration of industry and a wide separation between producer and consumer. Mr. Scragg declared that efficiency in distribution had lagged behind the achievements of mass production of goods.

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#### Modern Signalling Equipment at Lucerne

On page 542 appears a short description of the improved signalling arrangements recently brought into use outside Lucerne on the Swiss Federal Railways lines to Berne and Basle and extending as far as Littau and Emmenbrücke;

these complete the arrangements referred to in an article in our issue for October 1, 1937. The layout, which covers an appreciable distance in all, has several interesting features, including a stretch of single line, expanding to double after two tunnels have been traversed, followed by a junction with a double and single line. The whole area is controlled from Lucerne station by a power frame. Track circuiting is provided throughout—necessitating the use of wooden sleepers instead of the steel now generally used in Switzerland—with colour-light signals combined with the inductive A.T.C. described in our issue for February 16, 1934, page 269, and standardised by the Swiss Federal Railways management at the end of 1933. The points are fitted with two sets of trailable point lock gear, one at the switch points, and the other part way along the tongues. This arrangement has been adopted during recent years in Germany and other Central European countries with long, large-radius turnouts to ensure more positive control of the closed tongue and more reliable trailability at slow speeds. We believe that this installation, with its remote control of an important junction and emergency local operating facilities, combined with automatic train approach signal-gong actuation, marks a new departure in Swiss signalling practice.

\* \* \* \*

#### Notable Reduction in Tare Ratio to Load

The ratio of deadweight, or tare, to paying load, is an important element in the economical working of mineral traffic in complete trains, where as a rule there is no return load, and where very often, in mountainous country, the weight of trains is limited to the number of empty wagons that can be hauled up-grade to the mines. This principle, of reducing deadweight, has been carried into practical effect on one of the narrow-gauge Spanish railways, and the methods employed are described in our Overseas columns this week. The wagons are of steel, arc-welded, and all unnecessary weight is eliminated, the wagon body itself being constructed on the girder principle. Refinements such as the use of rubber in the suspension and all other springs contribute to the result, and the latest type of two-axle wagon constructed has the remarkably low ratio of tare to load, of 23.5 per cent., the wagon capacity being 20 tonnes and the tare only 4.7 tonnes. The trucks originally used were of 10 tonnes capacity and 6½ tonnes tare, so the paying train load is more than doubled. A continuous cable brake is used, on the lines of the old Heberlein brake, and this also effects an economy in weight, although we believe this type of brake requires great care on account of the time lag in taking up the slack.

\* \* \* \*

#### Easter Traffic in Eire

The traffic on the Great Southern Railways for Easter was disappointing. It was hoped that restrictions on Continental travel would induce English holiday makers who formerly travelled abroad to go to Eire, but these hopes did not fructify. No doubt the sea journey is a deterrent, especially as there are only night services, and the difficulties of traffic permits are not encouraging. The absence of stringent blackout regulations and rationing in Southern Ireland did not prove the attractions that might have been expected. It remains to be seen whether these amenities will prove a sufficient lure for holiday makers from England and Scotland during the summer. The feeling in Eire is that, if the excursion or tourist traffic to that country during the season should improve, it is bound to provide a splendid advertisement for normal periods of the undoubted scenic attractions offered.

### Picturesque

ALL the undertakings now controlled by the London Passenger Transport Board were conceived and sponsored by private enterprise; even the L.C.C. did not originate London's tramways, it only acquired them from the companies. The Metropolitan and District Railways date back to the sixties; the pioneer "tubes" were the City & South London, and the Central London. The conception and early development of what became known as "London's Underground" was only made possible by financiers. Well known names then were: Whitaker Wright; Pierpont Morgan; Yerkes, Perks, and Speyer.

Parliamentary fights over, came the long period of construction. The engineers were Dalrymple Hay, Chapman, and Zac Ellis Knapp. Then came thirty years of openings, operation, amalgamations, and extensions. Two pioneers in this period were Sir George Gibb and R. H. Selbie. The "Underground" acquired the company tramways, and the bus companies, and the names of Ashfield and Pick became familiar. The London Passenger Transport Board now employs a staff of over 86,000. Under Government control it has joined the "Big Four" which has become "the Big Five."

Since the retirement of Sir George Gibb, Lord Ashfield has been No. 1, and for many years Mr. Pick No. 2. If Lord Ashfield, or Mr. Albert Stanley as he then was, had not come to London in 1907, would London Transport have achieved the degree of perfection it has today? We think not. And would this degree of perfection have been much lower without Mr. Pick? We think so. The first Underground Electric trains, with their red plush seats and dark mahogany panelling, were pretty grim. So were the Central London stations with their white brick walls. Compare them with the new trains and the new stations (*not to mention the posters*); and the old York Street offices, with 55, Broadway. Mr. Pick, who retires on May 18, has had a career to be envied if he had done nothing else, and he has done much more than that. He has at least made London transport picturesque!

One final reflection. A £45,000,000 new works scheme of extensions and improvements is now nearing completion. London Transport has made fortunes for thousands; but it is poor. There is something very wrong about this. Take the case of the Charing Cross, Euston & Hampstead Tube (now the Northern Line) as an example. If the company had been given compulsory powers to purchase at the current values ten square miles of adjacent land for building development at Golders Green, capital increment in due course would have provided the money for building the line. It would have been the same with other extensions.

\* \* \* \*

#### Mr. E. B. Fielden

MR. EDWARD BROCKLEHURST FIELDEN, J.P., whose resignation from the board of the London Midland & Scottish Railway Company was announced by Lord Stamp at the recent annual general meeting, comes of a family which in one capacity or another has been associated with the early railways in Lancashire, the Manchester & Leeds, and their successors, of which the L.M.S.R. is the latest. Mr. E. B. Fielden's direct association with railways began in 1897 when he was appointed to the board of the Lancashire & Yorkshire Railway Company to fill the vacancy caused by the death of Mr. Thomas Fielden, M.P. for the Middleton Division of Lancashire. Mr. E. B. Fielden became Deputy-Chairman of the company in 1903, and Chairman, in succession to the late Sir George Armytage, Bart., in September, 1918. On the formation



of the L.M.S.R. in 1923, Mr. Fielden was appointed Deputy-Chairman. He has thus had over 42 years of active railway work, and the wide range of his experience in industry generally and in public life has made him the ideal railway director, bringing his many-sided knowledge to bear effectively on railway problems. Mr. Fielden represented Lancashire constituencies in Parliament from 1900 to 1906 and again from 1924 to 1935. He assisted the Government during the last war on committees associated with the textile trades and was a member of the Government Committee appointed in 1917 to report upon certain financial matters in connection with trade after that war. Lord Stamp, in his speech at the L.M.S.R. annual meeting, made the following appreciative reference to Mr. Fielden: "In his time he has been an engineer, a cotton spinner, a farmer, a Member of Parliament, a County Councillor, a High Sheriff, and a Master of Foxhounds, but first and last a railway director and Chairman of the Lancashire & Yorkshire before the amalgamation. In all his activities he has given himself wholeheartedly to the work in hand, which he has discharged with a keen sense of duty, and in all his activities he has won the admiration and affection of those with whom he has worked. He carries with him the good wishes of all in his retirement from the L.M.S.R., but if I know him aright he will fully occupy his retirement by work in other spheres of public duty." In succession to Mr. Fielden, the board of the L.M.S.R. has appointed two deputy chairmen, Sir Thomas Royden, Bart., C.H., and Sir Robert A. Burrows, as recorded in our issue of March 29 at page 467.

\* \* \*

### Canadian Pacific Railway Company

A SUBSTANTIAL increase in the takings from railway operations in 1939 was offset to a small extent by a decrease in "other income." Gross earnings from railway operations were up \$9,021,178 or 6.3 per cent. and working expenses (including taxes) increased by only \$1,250,365 or 1 per cent. Other income, after providing for depreciation of steamships and hotels, amounted to \$6,764,851, or \$598,821 less than in 1938. In the fixed charges of \$24,700,692 there was a decrease of \$67,246, and provision was also made out of income for \$805,830 guaranteed interest on bonds of the Soo line. Net income for the year was sufficient to meet all expenses and fixed charges, including provision for depreciation and taxes, leaving the large surplus of \$9,782,148 which has been transferred to profit and loss account. As already announced, the directors have decided not to make any distribution for 1939 on the £28,203,477 (\$137,256,921) of 4 per cent. preference stock which has received no dividend since 1937, when 2 per cent. was paid, requiring \$2,745,138. The reason given by the directors for adopting this course is chiefly the impossibility, owing to war conditions, of predicting the effect on the company of developments in the near future. Even after deducting from the surplus further sums of \$4,838,055 for loss on lines abandoned and on property retired and not replaced, and \$560,240 for miscellaneous debits the balance of the year's earnings was equivalent to a return of 3.19 per cent. on the preference stock.

Passenger earnings decreased \$504,341 or 3.1 per cent., despite the stimulating effect of the royal tour in May and June and an increase in mid-summer tourist traffic from the United States. Unfavourable business conditions in Eastern Canada in the early part of the year, a new competitive element in long-distance travel brought about by the inauguration last spring of transcontinental air services, and unsettled international conditions were factors contributing to the decrease. Freight earnings, on the

other hand, improved by \$10,010,559 or 9.1 per cent., reaching the highest level since 1930. In the early part of the year, the general industrial recession was responsible for decreases in most classes of commodities. Improvement began in the second quarter and became more pronounced in the remaining months owing to the grain movement and the impetus imparted by the war to certain classes of business. Earnings from grain and grain products for the year increased by \$6,214,457 or 24.2 per cent., almost three-fifths of the increase having occurred in the period prior to the movement of the new crop. The 1939 wheat crop in the Prairie Provinces was the second largest in history. Owing to the comparatively small volume of wheat exports during the summer and early autumn, terminal elevators at the head of the Great Lakes and in Eastern Canada became filled to capacity, and it was necessary for the railways to establish temporary embargoes during October and the first half of November against movement of grain from various western ports to the lakehead. In consequence this company enjoyed the benefit of only about one-third of the increase in its grain carryings to be expected from the 1939 crop. Some railway operating figures are compared in the accompanying table:—

	1938	1939
Miles open	17,256	17,169
Train-miles	36,918,187	37,596,982
Passengers	7,454,249	7,255,491
Tons, revenue, freight	30,471,115	33,030,062
Average haul, miles	398.24	424.97
Operating ratio per cent. (including taxes)	85.41	81.15
	\$	\$
Freight earnings	110,327,509	120,338,068
Passenger earnings	16,121,402	15,617,061
Gross earnings	142,258,981	151,280,699
Working expenses	121,506,515	122,756,880
Net earnings	20,752,466	28,523,819
Net income	28,116,139	35,288,671

The increase in working expenses was more than accounted for by the fact that in the first three months of 1938 deductions from basic rates of pay were still in effect, and, towards the end of that year, there was a temporary lay-off of shop and clerical staffs which did not recur in 1939. Transportation expenses increased \$926,661. The ratio to gross earnings was 36.18 per cent., the best since 1929, with the exception of the year 1936, when wage reductions were in effect. Operating efficiency continued to improve, as indicated by the following comparisons with 1938; the average freight train load was 1,717 tons as against 1,604 tons; the average consumption of fuel was 99 lb. per 1,000 gross ton-miles, as compared with 102 lb., reaching the lowest level yet recorded; the average speed of freight trains increased from 17.1 to 17.2 miles an hour and the gross ton-miles per freight train hour from 27,363 to 29,573. Amongst the causes of the fall in "other income" were a reduction of \$665,141 in dividend income, a net loss of \$71,274 from steamships (against a profit of \$591,071 in 1938), and a decrease of \$352,386 in hotel earnings. On the other hand, net income from interest, exchange, separately operated properties, etc., was \$1,128,570 higher, principally because of the more favourable rates of exchange.

"RAILWAY-ASSOCIATED" AIR LINES.—In the editorial article under the heading of "Railway-Associated" Air Lines, published in our issue of April 5, it was stated that the capital of Channel Islands Airways Limited is held in equal shares by the G.W.R., the Southern Railway, and the Whitehall Securities Corporation. This was unfortunately incorrect, as the G.W.R. and Southern Railway Companies each hold 25 per cent. and the Whitehall Securities Corporation the balance of 50 per cent.



## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### The Government and the Railways

April 5  
TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—As I have read, enjoyed, and I trust appreciated, THE RAILWAY GAZETTE for many years, I feel I may have earned the right to be critical. I did not like your paragraph on page 451 of your issue of March 29, headed "The City looks ahead." Are you not much too complacent about the value of the financial arrangements in respect of Government control as affording good grounds for satisfaction in any future, and presumably larger, amalgamation. For example, is a return of 1·2 per cent. on L.N.E.R. second preference something for which L.N.E.R. shareholders ought to be profoundly grateful? Is it not the case that despite your reference to Statutory Standard Revenue, the railway companies are now in a position in which they must earn very much more than the standard revenue in order to attain it? Despite the fact that the Standard Revenue has never been attained, it had at least a Statutory sanction which it will lose on your parallel of the present financial arrangements between the Government and the railway companies.

Quite frankly, I hardly think that a guaranteed minimum of 41 millions for the four railway companies in Great Britain can be considered to be a generous datum line. It is also appropriate to relate the "guarantee" to the capital it is intended to remunerate, and relevant to remember that important assets such as rolling stock and permanent way (to quote two of the principal items) are regularly replaced out of revenue at current prices.

As Lord Stamp so clearly pointed out, the replacement value of railway assets would be about 60 per cent. more than the figure at which they stand in the books. When it is borne in mind that the guarantee represents only fractional dividends on many of the stocks, it is easy to calculate that these fractions are considerably less if related not to assets which cost £100, but to capital which would cost £160 to replace.

Yours faithfully,  
"REALIST"

[The financial arrangement between the railways and the Government is not regarded complacently, for it has been fully recognised that the plan was accepted by the companies only after long negotiations and when the Government had proved unyielding upon the main points. The companies' position in the future has been strengthened to the extent that they now have a *guaranteed minimum* income whereas formerly they had, as factors in negotiations, the net revenues actually achieved and which showed marked variations from year to year, plus the implied right to the standard revenues beyond which point any achieved surplus had to be shared with the users of the lines. Not the least important aspect of the financial agreement was that it reiterated the railways' right to Standard Revenue, even though, by reason of the provisions for sharing with the Government, it made it necessary for the lines to earn 27 per cent. more in order to achieve that maximum and declared that the whole of the excess over the standard should go to the Government. The Statutory sanction for Standard Revenue therefore not only remains but is reinforced by the recent agreement. There is no question of the £41,000,000 being a generous amount—the Minister of Transport described it as "reasonable," which does not imply that he thought the Government was giving too much—but it does put beyond question certain minimum payments on the capital of each of the companies. In conjunction with other clauses, it ensures that whatever geographical disturbances to transport may result from the war the companies will each be assured of fixed proportions of the total revenues. In any scheme of unification cognisance would have to be taken of then recent earnings. In the event of the war being prolonged and traffic continuing to swell, revenues would be

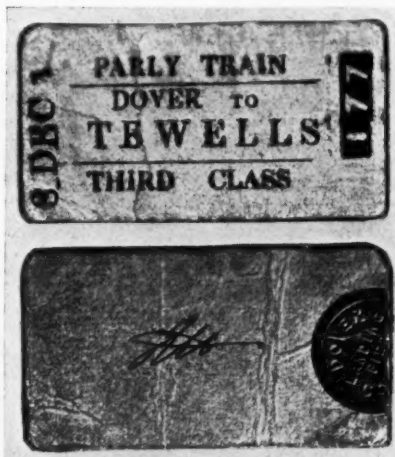
considerably in excess of the guaranteed minimum. On the other hand, should the question of unification arise some time after the war and control be still in being the guarantee might prove of considerable value. Sir Ronald Matthews, at the L.N.E.R. meeting, made this point when, after saying that he thought that the Government might have been more generous, said he would emphasise that his company would be sharing in a pool of net receipts of all the main-line companies which thus broadened the basis of the earning power in which the L.N.E.R. shared, and added that by the minimum payment "the company is guaranteed against future possible slumps in traffic which might arise in the later period of control."—ED., R.G.]

### An Old "Parliamentary" Ticket

60, Crescent Gardens,  
Eastcote, Ruislip  
March 13

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have now had an opportunity of looking into the question of the old S.E.R. ticket which was raised by a correspondent in your issue of February 23, and have carefully searched through my files and compared this ticket with those in my collection. It is not easy to place any precise date either for the printing or for the issue of this specimen. The type appears to have been impressed through a ribbon and not directly inked and applied to the blank. Tickets were customarily printed in this way until about 1860, when the inking of the type superseded the older method. The fact that there are but three numerals indicates that a great sale for this particular ticket was not expected, and it is possible for the ticket to have been issued as late as 1889. After that date it was obligatory for the company to print



Facsimile of early S.E.R. ticket to which a correspondent referred in these columns on February 23

the fare on all tickets, and this requirement was not relaxed until during the great war.

My earliest dated S.E.R. tickets giving the year of issue are 1876, although the inclusion of the year in the date stamp did not become general until about 1879. A peculiarity of the ticket lies in the use of block type numerals, *i.e.*, colourless numerals in black squares. The S.E.R. tickets in my possession go back to about 1868 and all have ordinary numerals. From this fact and also a comparison with tickets of the period 1850 to 1860 issued by other companies I would place the date of printing somewhere between those years.

Yours faithfully,

G. F. QUARTERMAIN

## PUBLICATIONS RECEIVED

**Passenger Tickets.** By Lionel Wiener. London: THE RAILWAY GAZETTE, 33, Tothill Street, S.W.1. 9½ in. × 7 in. 358 pp. Paper covers. Price 10s.—The subject of railway tickets was discussed at a session of the International Railway Congress Association in 1910, when its importance was recognised. Since that time the development of other forms of transport and of self-printing and self-issuing ticket machines has brought a new interest into the subject which will be greatly stimulated by this new work of Professor Wiener. The text appeared originally in serial form in the *Bulletin of the International Railway Congress Association* and is now reprinted in book form. The legal side

of the relationship between the purchaser of a ticket and the administration which issues it, and the varying interpretations given to this relationship in different countries are discussed in Part A of the work. In Part B the physical aspect of tickets, the substances used, and the shape adopted are reviewed. With a few exceptions, tickets are of cardboard or paper, but illustrations are reproduced in this part of the work showing passes or tickets of such substances as ivory, celluloid, leather, and metal, with a great variety of shapes. Systems of ticketing form the subject of Part C, beginning with the revolutionary change introduced by Edmondson in substituting cardboard printed tickets for

the old written forms. Illustrations of some English paper tickets of 1832 and of some Belgian tickets of 1835 are reproduced in this section, which also includes a fascinating international ticket display.

The pecuniary aspect of the ticket is dealt with in Part D, wherein again is a multitude of photographic reproductions of tickets from many quarters. Methods of checking tickets and precautions against fraud and forgery are among the subjects considered in Part E, with a further wealth of pictorial explanation. Colours of tickets come in Part H, and Part I, containing 68 pages, is fully occupied with descriptions and illustrations of printing and issuing machines. At the beginning of the work is a comprehensive index of text and illustrations.

(See editorial note on page 530)

## THE SCRAP HEAP

APHORISMS BY MR. FRANK PICK

I am inclined to think it is better to have a skeleton in the cupboard than a wardrobe full of fancy costumes.

To escape from rationing may not be a virtue but it is a success.

To keep an honest mind under rationing far exceeds the capacity for honesty by mankind as it is.

The still small voice (of conscience) has become a warbling note of varying pitch.

Necessity is the mother of invention. Rationing is the father.—*Mr. Frank Pick at the Institute of Transport luncheon on April 8.*

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TOURS DE FORCE

One of the motorbuses used for the transport of R.A.F. personnel in France carries inside this query, a relic of its peacetime employment: "Why not a British or Continental road tour this year?" The bus comes from a town in Notts, and was formerly used for long-distance holiday tours. Another bus serving with the Advanced Air Striking Force shows an illuminated destination sign which says "Blackpool." A third proclaims that it is setting out on a "Mystery Tour." A name suggested for this service of buses is "The Maginot Line."

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Excursions at such cheap rates as Netherton to Portsmouth, fare 5s.; Netherton to Bristol, fare 5s.; and Netherton to Liverpool, fare 5s.; were advertised on a quantity of handbills dated 1885 which were found stored in the roof of the old ticket office at Blowers Green railway station, then known as Netherton station, according to the *Dudley Herald*. This station is now being demolished in favour of a new brick and concrete construction situated on the level of the main road. Some correspondence dating back 96 years was also found in perfect condition.

After her car had been in a level-crossing smash, Mrs. Bessie Sheldon sued the railway company in Sacramento, California, for £1,500 damages, claiming that the engine of the train had hit her car. The court decided that her car had hit the engine and awarded £57 damages against her to the railway company, states a recent press message.

\* \* \*

NEW ESCALATORS AT SLOANE SQUARE

On March 27, Mr. Arthur Hoyle, Stationmaster at Sloane Square station, started the new escalator on the westbound platform by cutting a tape,

thus releasing a spring-loaded switch that set the machinery in motion. Mr. Hoyle has been at Sloane Square station since 1911, and his service of 29 years at one station is a record for London Transport. The new escalators, which are for upward movement only, replace the notorious climb of 52 steps about which there has been correspondence in *The Times* over a long period. Sloane Square is one of the oldest and best-known stations on the railways of the London Passenger Transport Board. It was opened in 1868, and remained in its original condition until the present reconstruction, which is to be completed at the end of July. A brief account of the new work was given in our issue of March 29, page 486.



Mr. Arthur Hoyle, Stationmaster since 1911 at Sloane Square station, London Passenger Transport Board, cutting a tape to start the new escalator on the westbound platform, March 27, 1940

## OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

### ARGENTINA

#### Latest Crop Report

The latest forecast of this year's wheat crop, recently issued by the Ministry of Agriculture, places the approximate yield 788,000 tons lower than the previous one given on December 15, and the total, now estimated at 3,212,000 tons, is the lowest for 27 years. The Department of Agriculture attributes the low wheat production not only to the adverse weather conditions, which caused great damage last year, but also to the fact that quotations did not improve sufficiently to render the thrashing of the crop a profitable proposition in some districts. When it is mentioned that the average yearly figure for wheat production over the last decade amounts to six and a quarter million tons, with a maximum of over nine millions a season ago, the extent of the disaster will be realised, and it is already being reflected in the railway traffic returns.

The figures for linseed, though not showing so serious a slump, are reduced by 123,000 tons in the latest estimate, and comparison with previous years shows that the estimated production, 1,127,000 tons, is the lowest since 1921-22.

#### Bumper Maize Crop

But nature's law of compensation has already come into play and an enormous maize crop is now assured, the weather in all stages of its growth, except in a few districts, having been all that was to be desired. Consequently, a record crop of some twelve million tons is already being mentioned, but the one uncertain factor is how it is going to be disposed of. The question of transportation of Argentine produce needed by the Allies is already acute, and if bottoms are scarce for carrying away wheat and meat, it is unlikely that steamers will be supplied by Great Britain and her allies for the transportation of maize, when they are needed for commodities that are more valuable and more urgently required.

#### War Solves Problem of Surplus Wheat Stocks

The outbreak of war solved for this country the acute problem of what was to be done with the surplus wheat stocks, stagnating under the influence of lack of demand and low prices, and they have all been disposed of at a much higher price than at one time seemed possible. The corresponding effect on the balance of payments was also a satisfactory feature from the point of view of the railways and others who have to remit money to Europe, as the value of the Argentine peso is steadily appreciating.

#### Transport on Credit

Local British residents read with a certain feeling of satisfaction that the

Buenos Ayres Southern and Western Railways had at last taken drastic measures in connection with the long outstanding debts contracted by the Government of the Province of Buenos Aires for the transport of passengers and goods on "to pay" orders issued by provincial authorities. It was current knowledge that the Province had not been settling the accounts presented by the railway companies for a matter of three years, and the amount owing according to one reliable newspaper was in the neighbourhood of five million pesos. The railway companies concerned then decided that in future they would not grant any further credit to the Government of the Province of Buenos Aires, in view of the impossibility of obtaining a settlement and issued instructions to all the railway dependencies not to accept, in future, any orders from the Provincial Government for passenger tickets, goods transportation, parcels service or even telegraph messages, unless payments were made in cash and at full rates. This was undoubtedly a severe blow for the Provincial authorities—and on the eve of elections too—and a meeting of the Cabinet was at once called with the result that the railways were asked to send a representative to headquarters to discuss the matter with the Provincial Minister of Finance. Dr. G. E. Leguizamon, President of the Local Board of the two companies attended on their behalf, and next day the surprising announcement was made in the press that the companies had desisted from their attitude on the promise of the Government to settle all their accounts regularly from January 1 of this year, within a month of their presentation, and to pay interest at the rate of 6 per cent. per annum in future. In regard to the outstanding amount, no payment was made and nothing was published except that it would earn interest at the same rate.

So ended a storm in a tea-cup, which seems to provide another illustration of a foreign-owned enterprise getting the worse of a brush with the local government authorities.

### UNITED STATES

#### Faster Services in the South-West

The gradual extension west and south of Kansas City of the high-speed diesel trains of the Santa Fe and Rock Island lines has caused some considerable timetable changes in the area bounded on the north by St. Louis and Kansas City, on the west by Tulsa and Oklahoma City, on the south by Dallas, Houston, and San Antonio, and on the east by Memphis. On December 10, 1939, the Santa Fe extended its Kansas City and Chicagoan diesel trains—till then working between Chicago, Kansas City, and Wichita (Kansas)—southwards for 172 miles to

Oklahoma City; the entire journey of 850 miles is allowed 14 hr. southbound and 13½ hr. northbound. In addition, through sleeping cars from Chicago to Fort Worth and Dallas, Texas, began to operate on these trains, and also through connecting diesel services came into operation between Kansas City and Tulsa, taking 4 hr. 50 min. for the 256 miles. This was a reply to the Rock Island's Rocket diesel high-speed trains, which had brought Kansas City within 7½ hr. of Oklahoma City and within less than 4 hr. of Wichita.

These changes have now drawn fire from another quarter. The St. Louis & San Francisco Railroad—better known as the Frisco Lines—has not hitherto indulged in speed, but has built up a reputation on comfortable travel, good catering, and courteous service. From December 10, however, the Frisco timetables were completely recast, and the most remarkable change was a drastic cut from 12½ to 7½ hr. in the fastest schedules between Kansas City and Oklahoma City, a route 379 miles in length. This requires an overall average of 52.3 m.p.h., including five regular and three conditional stops, and is maintained by standard Hudson (4-6-4) express locomotives and non-streamlined coaching stock. The Santa Fe, Rock Island, and Frisco lines each now run one 7½-hr. train in each direction daily between Kansas City and Oklahoma City. The through Frisco service between St. Louis and Oklahoma City has also been overhauled, and the fastest train—the Will Rogers—has been speeded up to a 12-hr. run over this 542-mile route, instead of the previous 12 hr. 55 min., despite the difficult grades of this company's lines through the Ozark mountains. Also between Kansas City and Memphis, 484 miles, the quickest Frisco times have been cut by nearly 2 hr., the Southland now taking only 11½ hr. in each direction. Until now the Missouri, Kansas & Texas—better known as the Katy Lines—is the only company in this area that has not reduced its running times.

### INDIA

#### N.W.R. 20-coach Weekly Excursion Trains

The North Western Railway is now running weekly excursion trains each way over the Lahore—Rawalpindi section, which are proving so popular that they have gradually had to be added to until the make-up now consists of 20 bogie coaches, accommodating 1,500-2,000 passengers on each train. This is probably a record for a regular weekly train-load, and, as it is exceeding platform lengths, the administration is considering running these return trips twice weekly.

#### Tourist Traffic

According to the annual report of the Central Publicity Bureau, Indian State Railways, the political situation in Europe and the Far East was responsible for a substantial decrease



in the number of overseas visitors to India during the year 1938-39. Only two ships on world cruises arrived in India, against three in the previous year. Nevertheless, enquiries for independent tours and itineraries showed a marked increase. The value of the itineraries rose from Rs. 6.32 lakhs in 1937-38 to Rs. 7.36 in the year under report. It is not possible, of course, to ascertain definitely how many of the enquiries answered actually materialised, but confirmation has been obtained to show that 38.18 per cent. of the passengers seeking advice from the London bureau actually travelled. It is not unreasonable to assume that the actual percentage was in fact much higher.

The Central Bureau also devoted considerable attention to the development of lower class traffic in India, particularly on occasions of *melas* and festivals of religious significance. Special efforts were made to attract Buddhists from Burma and Ceylon to come to Buddhist festivals in India, and the response in 1938-39 was very encouraging. The policy of advertising India as a whole, rather than Indian railways, was adopted in the publicity campaign abroad.

## CHINA

### Central China Railway Passenger Services

There are now two express services daily between Shanghai and Nanking, and two local and one mixed train between Nanking and Chinkiang. Between Shanghai and Soochow there are two round trips daily by petrol railcars. The expresses complete the Shanghai—Nanking run in 5½ hr.

On the Shanghai—Hangchow line there are two mixed trains each way daily and one mixed train runs from Shanghai to Chunghuamen and back. There are two mixed trains each way over the Kashing-Soochow chord line, seven return trips by railcars over the Shanghai—Forts line, and six mixed trains each way over the South Shanghai line to and from Hsinlungshua. Fares are 6, 3 and 1½ sen a km., for first, second, and third class respectively, but there is also a special fourth class of carriage for the very poor.

### Interruption of Traffic on French Yunnan Railway

During January continuous traffic over this line was maintained with difficulty, and transhipment to avoid damage caused by Japanese bombing was often necessary. On January 31, however, the mass bombing—in which over 500 bombs are reported to have been dropped—severely damaged a tunnel between Paichai and Wantang, and it is estimated that at least a month will be required for its repair. Meanwhile, the only effective line of communications left open for the Chungking Government is by the Burma Railways and the Lashio—Kunming—Chungking or Yunnan—Burma road. Despite French and American protests, the

bombing of the French railway continues, and severe damage was done on February 16, at Chihstun, 75 miles inside Chinese territory.

Due to this attitude of the Japanese, the French are refusing them landing facilities in Indo-China for their Tokyo-Bangkok air liners. An over-night stop had been arranged at Hanoi. The matter is still under discussion.

### Another New Highway Just Being Completed

As the capture of Nanning is preventing the import of supplies from Indo-China *via* the new railway through Kweilin and Hengyang, on the Canton—Hankow line, the Chinese are hastening the completion of a new highway from Tungtung (Dongtang), on the Kwangsi—Indo-China frontier, to Kweiyang, capital of Kweichow Province, whence there is a road to Chungking. Imports can proceed from Haiphong to Tungtung by train, and thence by road.

## MANCHUKUO

### New S.M.R. Capital

At an extraordinary meeting held at the Railway Club in Tokyo on January 20, approval was given by the shareholders of the South Manchuria Railway Company, to an increase in the company's capital by issuing shares to the value of Y. 600,000,000 and debentures to the tune of Y. 1,200,000,000, in addition to the remaining capacity for obtaining funds amounting to Y. 546,000,000. The total new capital that can now be raised is, therefore, Y. 2,346,000,000, or about £138,000,000.

There is to be an immediate issue of 6,000,000 new shares, 4,000,000 to be distributed among present shareholders, at the rate of one new share for every two held, and 2,000,000 shares divided between the S.M.R. staff (400,000), Manchukuo Government (1,000,000), and Manchukuo citizens (600,000).

### Annual Sum Paid by S.M.R. to Government in Respect of Working State Railways

In order to unify the accounts of the S.M.R. and of the Manchukuo State Railways—which the S.M.R. administers—it has been decided that the S.M.R. shall pay to the Government an annual sum of Y. 15,000,000, or nearly £900,000.

### Remarkable Increase in Passenger Traffic

On all lines in the State there was a remarkable increase in passenger traffic during 1939, as may be seen from the following figures:—

	1938	1939	Increase per cent.
Total passengers carried	46,470,000	65,380,000	44
S.M.R. passengers	—	24,900,000	22
State lines	—	37,260,000	61
North Korean lines	—	3,220,000	42

This great increase was successfully handled despite a severe shortage of coaching stock and of staff.

### New Lines Opened

Five sections of new line have recently been opened. Two were formally opened for public traffic on

December 16, namely Chiamussu—Lienkiangkou (12.7 km.), across the Sungari river; and Lienkiangkou—Holichen—Hsingshanchen (54.3 km.). The three others were completed for provisional operation during January: (1) Patao—Lintzutao, a 14.3-km. line through the rich Tungpientao mineral area, and an extension of the Yayuan—Patao line; (2) Lienkiangkou—Tangyuan (37.6 km.) a branch from the Lienkiangkou—Hsingshanchen line north-eastwards along the Sungari river *via* Wangkiang and Fulung; and (3) Peihuangling to Laoheishan, a distance of 82.5 km., running through Chintsang, Fengshao, Langchi, and Heiyang, and extensive stretches of virgin forest. These new extensions are important assets in the development of the Tungpientao industrial area in north-eastern Manchukuo. The Lintzutao line in particular has a bright future before it as a mineral line for carrying the iron and other ores and staple products also.

## SPAIN

### Reducing Deadweight in Mineral Wagon Construction

The Chief Mechanical Engineer of the La Robla Railway describes in *Ferrocarriles y Tranvías* the recent developments in the reduction of tare and deadweight in the construction of wagons for the transport of coal between Asturias and Bilbao. The modernisation of mineral wagons carried out on the La Robla line in recent years has resulted in a remarkable and successful reduction in the deadweight hauled, and hence a notable increase in paying load, a factor of vital importance for a narrow-gauge railway transporting minerals over heavy grades in mountainous country. So successful have been the methods employed that the tare of wagons has been reduced from 6½ tonnes for a paying load of 10 tonnes, to 4.7 tonnes for a load of 20 tonnes the latter representing a ratio of tare to load of 23.5 per cent. The result of this reduction in deadweight has been that the Garratt engines which previously hauled 45 empty ten-ton wagons over 2 per cent. (1 in 50) grades, can now handle 50 twenty-ton trucks of the new design.

### Details of Construction

The main features of the new wagons are illustrated in the article. The whole body of the vehicle is of arc-welded construction, the flooring and sides forming a girder frame. Bearing, draw, and buffer springs, are all of rubber, and braking, with eight shoes on the four wheels, is by means of a continuous cable, worked from the locomotive or from a brakeman's shelter. Materials are those obtainable locally and the author remarks that results might be even more startling with the employment of light alloy metals or high-tensile steels. The economic effect of the reduction of useless weight is described in terms of ton-km. hauled, and it is also emphasised that the new stock has been running long enough to

show a marked economy in maintenance both of track and of equipment.

## SOUTH AFRICA

### The Railway Budget

Presenting the Railways & Harbours budget for 1940-41, the Minister, Mr. F. C. Sturrock, said he expected not only to wipe out last year's deficit of £117,897 but, in addition, to show a surplus of £1,500,000 at March 31, 1940. Of this surplus £1,000,000 would go to the Rates Equalisation Fund, £200,000 to Pensions and Superannuation Funds and £300,000 to Betterment Fund.

The estimated revenue for 1940-41 was, he said, £39,505,838 made up as follows: railways £37,201,828, harbours £1,967,100, steamships £236,885, and airways £100,025. Compared with the expected final revenue results for 1939-40, the estimates for the new year show a decrease of £287,771.

The estimated expenditure for 1940-41 was: railways £34,387,993, harbours £1,629,107, steamships £215,654, airways £362,634, a total of £36,595,388, leaving a gross surplus of £2,910,450. Of this amount £1,000,000 would be appropriated to the Betterment Fund, £487,000 to deficiency in Pension and Superannuation Funds, £800,000 to Renewals Fund and £600,000 to writing out of capital account discount and expenses on pre-Union capital, leaving an amount of £23,450 to be carried forward to 1941-42. The Minister pointed out that the amount of capital account representing discount and expenses had been reduced out of revenue from £3,400,000 a few years ago to £1,480,574. With this further contribution of £600,000 the amount would be decreased to less than £900,000.

### Hercules—Koedoespoort Construction

This work [briefly described on page 455 in our issue of March 29—Ed., R.G.] comprises the construction of a double line between Hercules and Capital Park and a single line between Capital Park and Koedoespoort. The estimated cost of the whole project is £189,037. The new line will relieve the main line section between Koedoespoort and Pretoria of the heavy goods traffic to and from the Eastern Transvaal, the Witbank coal area and Lourenço Marques.

### Wheat Crop Estimate

The latest official estimate for the 1939-40 season's wheat crop is 4,700,000 bags, an anticipated decrease of 550,000 bags compared with the figure in respect of the previous season.

### New Marine Airport at Durban

The new marine airport at Congella, Durban—the terminus of the flying boats operated by Imperial Airways between England and South Africa—is practically complete and will be opened in the near future. This fully-equipped base, comprising, *inter alia*, a huge hangar, slipways, workshops, and Customs offices, was provided at

a cost of over £60,000 and is in replacement of the temporary seaplane facilities at Salisbury Island.

### Lockheed All-Metal Aircraft for South African Airways

With a view to speeding up the air services operated in the Union of South Africa, the administration recently placed an order in the United States for 16 twin-engined Lockheed aircraft fitted with Pratt & Whitney engines at a cost of £25,569 each. These aeroplanes have a top speed of 262 m.p.h. and are capable of carrying 14 passengers each. The purchase of two four-engined machines of the same make each with a seating capacity for 32 passengers and a speed of 296 m.p.h. is also being considered.

## RHODESIA

### The 1939 Year's Working

The financial results of the Beira and Rhodesia Railways for the year ended September 30, 1939, show a satisfactory position although the revenue decreased in comparison with the previous year, which was, however, a record, as the following figures show:—

	Year ended September 30 1938	1939	Increase or Decrease £
Total Earnings ...	6,094,596	5,496,621	-597,975
Total Operating Expenditure ...	3,427,752	3,479,952	+ 52,200
Net Operating Revenue ...	2,666,844	2,016,669	-650,175

Rates reductions estimated to cost £292,000 in a full year came into force on January 1, 1939, and thus account for some of the decrease in earnings, and the reduction in the tonnage of chrome ore carried from 256,039 to 121,774 tons had an adverse effect on revenue. Copper and asbestos traffic remained stationary but zinc increased by 6,000 tons to a total of 14,721 tons. Coal and coke traffic created a record by topping the million tons mark, the tonnage carried being 1,016,041 compared with 948,646 tons during the previous year. Excluding the Vryburg—Bulawayo section, the total tonnage carried was 2,982,572 as against 3,108,396 in 1938, but the train mileage dropped from 5,764,528 to 5,286,580.

### Passenger Train Services

The principal feature of the new timetable operating from February 5 is the re-introduction of fast trains leaving Bulawayo on Wednesday mornings for Salisbury and Beira and for Victoria Falls and Ndola. These trains obviate the long wait at Bulawayo for through passengers from the Union of South Africa, the combined Cape and Transvaal mail train arriving at 7.30 a.m. The new expresses to Ndola and to Beira leave Bulawayo at 9.30 and 10.15 a.m. respectively, reaching their destinations at 4.30 p.m. and 5.30 p.m. on Thursdays. With the falling off of passengers from the Cape after the close of the summer excursion season and due to the reduction of overseas tourists, the twice-weekly express service from Capetown to Bulawayo has been withdrawn and a slower

service which combines with the Johannesburg—Bulawayo train at Mafeking has been substituted. An improvement has been effected in the Bulawayo—Durban service by an earlier arrival in Johannesburg, enabling all Rhodesian passengers to obtain a quick connection to Natal, giving a 46-hr. service from Bulawayo to Durban thrice weekly, which will prove popular in the winter season.

### Bulawayo—Sawmills Deviations

With the opening to traffic on January 25 of the deviation between Bulawayo and Paspas, the work on a series of eight deviations and reggradings on the 61-mile Bulawayo—Sawmills section begun in February, 1938, has been brought successfully to a close. The deviations were designed to increase the train loads in both up and down directions and in conjunction with this work the line was relayed with 80-lb. rails and heavier stone ballasting provided, this forming the latest section of the 80-lb. relaying of main line track now extending right through from Salisbury to Livingstone.

The old line had a ruling grade of 1 in 80 uncompensated, which has been eased on the new line to 1 in 130 compensated in the down direction, and to 1 in 110 compensated in the up direction. This has enabled the goods train loads to be increased from 780 tons to 1,150 tons on down trains (Sawmills to Bulawayo) and from 630 tons to 1,000 tons on up trains. The minimum radius of curves on the old line was 10 ch. whereas the new line has a minimum of 20 ch.

Interesting features of the work include the construction of two bridges carrying roads over the railway, the first bridges of their kind ever to be provided in Rhodesia. They are of the reinforced concrete arch type, and eliminate two level crossings, while the third new bridge on this line is also unique on the Rhodesia Railways in that it carries one railway line over another: the service line to the Bulawayo magazine sidings over the main line. The main line approach to the west end of Bulawayo station has also been re-modelled and improved by alterations to both the Cape and the Victoria Falls lines as they join outside the station. These track improvements, together with the provision of new shunting legs has necessitated the re-signalling of the western approaches to the station and yard.

### Brighter Outlook in 1940

Despite the rates reductions mentioned above, traffics and receipts since the beginning of 1940 are proving very satisfactory. This remark applies especially to mineral and fuel for the mines, and even chrome ore for export, which had fallen off so seriously, is improving. General goods traffic is maintaining a high level. The temporary set-back suffered by traffics in the October-December quarter has probably been counterbalanced by the marked improvement since Christmas.

## THE OUTDOOR MACHINERY DEPARTMENT—IV\*

*Notes on the constitution, duties, and relationships with other departments of the Outdoor Machinery Department of a British main-line railway*

*By J. DALZIEL, formerly Assistant Electrical Engineer, L.M.S.R.*

WHEN a scheme is authorised, specifications are prepared upon which to invite tenders. So far as outdoor machinery in its widely divergent character is concerned, it is only in a very few cases, such as capstans, that standardised constructions to railway drawings can come into question. In general, O.D.M. specifications should be concerned with matters of constructional design only to the extent of ensuring the use of suitable qualities and strengths of material consistent with the conditions, *e.g.*, where electric operation necessitates a higher factor of safety. The specification should be mainly concerned to set out as unmistakably as possible the purposes to be served and the conditions governing them and the execution of the contract.

If there are factors affecting working known to the O.D.M. officers but possibly not obvious to prospective contractors, they should be set out, as should also any points of design suggested by railway experience as either desirable or objectionable.

The specification should in fact make clear in every way to the prospective contractor exactly what the railway staff wishes to do and what is expected of him; generally, the more fully this is fulfilled the better will be the prices quoted—since there will be fewer uncertainties for which cover has to be allowed—and the more smoothly the contract will proceed. It is also important to make it understood why particular devices or requirements, such as interlocks, are asked for, since thereby it may be much easier to design for them, and all such requirements must be clearly set out. It cannot be expected in these competitive days that a firm will or can cover in its tender a detail that is not specified and which its competitors may leave out.

Should the embodiment of some detail appear desirable to the contractors, they might refer to it in their tenders, quoting an extra price for its inclusion; but they are entitled to assume that if required it would be asked for. This applies to accessory parts such as brakes, interlocks, special control and the like, and especially to partly electrical and partly mechanical parts which are especially liable to be over-sketchily specified, and the working of which should be clearly envisaged and covered in the specification. The same applies to any special technical effects, electrical and/or mechanical, it is desired to embody.

### Test Clauses in Specifications

The tests or other measurements of fulfilment of the contract to which the plant is to be subjected on completion should be set out, with especial care; where possible preliminary tests at the maker's works of the plant as set up complete, or in respect of detail parts, should be asked for, and these are of special value in that they may indicate omissions or deficiencies which are easier to put right at that stage than after completion at site. Certain tests of details, such as those connected with the rated loading capacity of electrical gear, cannot be carried

out conveniently on site and are generally done at the maker's works; occasionally they, with the plant as a whole, are subject to a specified succession of work cycles; these may check but not replace works tests for a certain period at a certain load and may, but should not, reveal a considerable discrepancy between the latter and the equivalent effective working load.

The use of suitable constructional material should be ensured by the specification of chemical and physical tests for quality and strength in accordance with the general practice of the railway and carried out by the recognised testing department. Inspection of material and parts in course of erection to ensure satisfactory workmanship is generally also specified, particularly in the case of large and important contracts.

### Penalty Clauses and Extras

It should be made quite clear what is expected of the contractor in the event of failure of his plant under any of these tests, partly or as a whole. In general it should fall upon him to make good any failures under the contract.

It is particularly necessary to define a procedure as to extras; it should be specified that a claim in this respect will be entertained only if the intention to make such a claim is intimated and agreed before the work it relates to is put in hand.

Care should be taken to make clear what is comprised under the contemplated contract and what work in connection with it, such as buildings, foundations, bringing up of power supply, will be done by the railway. Where foundation work is so done, drawings to which it is to be carried out should be supplied by the constructor. It is difficult to fix responsibility for defects in foundations under this arrangement, the main reason for the adoption of which is that the work falls within the jurisdiction of the Civil Engineer and, where it can be arranged with the latter, foundation work should form part of the contract.

One of the most difficult situations that may arise is material variation of the requirements and terms of a contract on which work has been begun; in such a case the contractor is free to quote his own price without competition, and cannot be blamed if he at least ensures that he makes no loss.

### Drafting of Specification Clauses

All specification clauses as well as those of strictly legal type should be approved by the Solicitor. Inclusion of appropriate clauses of the British Standard Specifications eases the work of drafting and keeps the terms of the contract on an accepted basis.

Incidentally, relative to this point, where the railway organisation is divisional, even though the practice of the divisions may differ, one would expect that for the same railway—certainly for the same department of the same railway—term of contract, specifications of material and so on would be identical; this has not always been so and contracting firms have thereby been put to inconvenience.

The specification should also call for the provision with the tender of general drawings and a detail specification indicating the prospective contractor's scheme for carrying

\* Previous articles of this series appeared in our issues of March 1, 15, and 29



on what is required, and giving particulars of foundations and weights affecting the work the railway company may have to do, or arrange for outside, but in connection with the contract. It is important, but not easy, to ensure that the particulars are moderately accurate; if, as the constructor develops his design, the weights grow three or four fold, it may prove impossible to accommodate the plant, and the railway will in any case be led to incur added expense. It is desirable but difficult to cover against such a contingency in the specification so as to put the onus of any added expense on the contractor; contractors may, however, cover against such a clause in their tenders, and as it would come into operation in favour of the railway very infrequently, its inclusion as a standard clause might prove to effect more loss than gain in the long run.

#### Approval of Constructional Drawings

Further drawings, provision of which should be required by the specification, are working drawings of the plant as it is proposed to construct it, to be submitted for approval before commencing construction. These ensure that the specification is being complied with to the satisfaction of the railway officers and that the conditions of the installation have been understood; also that the methods of control and operation contemplated are suitable and that strength, bearing surfaces and the like are adequate; it also affords an opportunity for them to suggest improvements and indicate possible weaknesses as suggested by their experience and knowledge of the conditions. It should be made clear that the approval of drawings does not relieve the contractor of responsibility for his plant being up to the work; at the same time approval should not be lightly given. Consideration of these drawings is not easy. It is clearly out of the question, for example, for the strengths of detail parts to be checked in view of the work and added staff which would be entailed, and it is difficult to object to a design the drawings of which show it to have been repeated many times over. Nevertheless, such a design may be entirely successful for say a few work cycles per hour, yet may prove a failure when work cycles and speed of operation are greatly multiplied.

The supply of working drawings is also intended to facilitate maintenance and the carrying out of possible future alterations and extensions. Compliance with the condition of holding over construction until the drawings are approved may, in special circumstances, be waived, or in rare cases may be evaded. It does not follow that good design or suitability of construction will be impaired in all such cases; nevertheless, precisely this condition applied in the worst executed contracts with which the writer has had to deal.

The allocation of a contract after consideration of a set of tenders received from invited firms should be based mainly on price, so long as the requirements of the specification are met. Contractors wishing to submit an alternative scheme should be allowed to do so, but only as supplementary to a tender based on the specified scheme. Alternatives should be given full consideration, and if they present advantages should be adjudicated as regards price accordingly.

The allocation of the contract may prove controversial. Generally speaking, a firm freely invited to tender and putting forward the lowest price is entitled to the order unless its proposals are markedly inferior to competing ones, which is very improbable in the case of an invited firm. Frequently, however, firms not on the regular list of the railway ask to be allowed to quote, and it is perfectly legitimate to pass over their tenders, even if very low, should there be any doubts as to the proposals put

forward or the ability of the firm to execute the contract satisfactorily and put sound work into it. The firm's drawings and detail specifications, while illuminative as to the former points, may throw no light on the latter.

Again, where the proposals and/or constructional features of the lowest tender appear inferior to those of competing offers, very careful consideration should be given as to its acceptance, which in the absence of any substantial price margin would be apt to develop into a contest between the efforts of the contractor to keep costs down and those of the railway to ensure a good job.

#### Course of Contract

During the progress of the work a close and continuous check should be kept on the costs being incurred in relation to the amounts authorised. This applies especially to composite schemes under which several contracts may have been placed and work be in hand by the railway itself. The co-operation of the Accountant's Department is essential in this connection, and the form in which estimates are drawn up is usefully prescribed by the Accountant. Estimates should provide a margin for market fluctuations, and also, particularly in the case of novel schemes, to allow of some variation from the original proposals. This again is a controversial point, as in general such variations are opposed by the Accountant. It can readily be understood, however, that in the necessarily more detailed study of an authorised scheme than of one merely projected, improvements may suggest themselves; if they do it would be an obvious error not to embody them, and there must be sufficient flexibility of interdepartmental method to permit of this. It is clearly impossible for the O.D.M. Department to give more than general study to schemes in their embryo stages.

#### Supervision

The extent to which plant should be supervised in course of erection varies, but supervision should always be sufficient to ensure reliable workmanship. Generally, defects will reveal themselves more quickly on a machine than on a plain structure; the omission or bad setting up of a rivet here and there will tell a tale on either sooner or later. Only inspection can safeguard against anything such as this, and inspection on the site, in closer touch with the working conditions than is possible in the office, may reveal deficiencies in design or omissions that are better remedied before the completion and test of the plant.

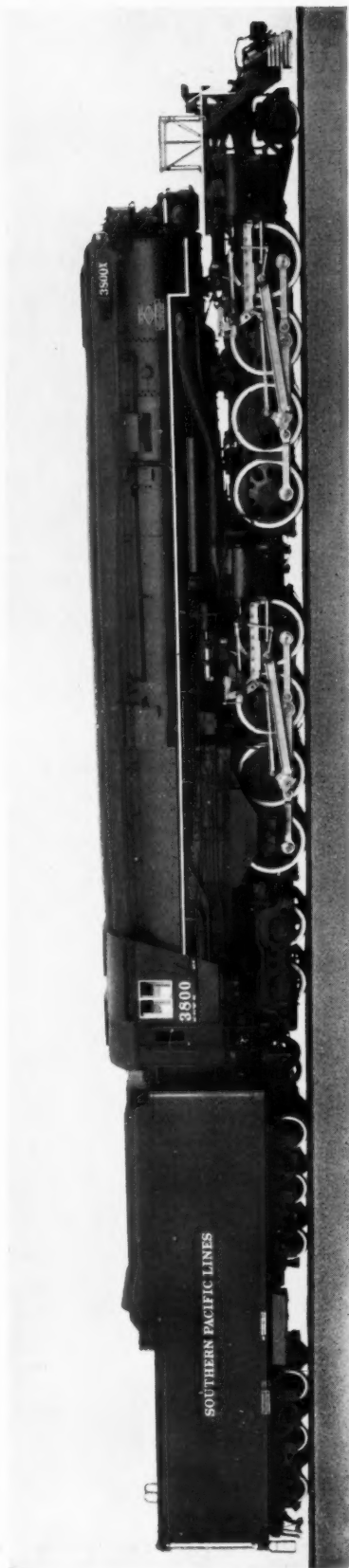
Tests on completion should reproduce actual working conditions as nearly as possible. The plant must be shown to fulfil all the requirements set out in the specification in respect of load and overload, speeds, stability, strength and so on. All emergency, interlock and other protective apparatus should be tested specially in action, and the fact of this having been done recorded together with the results. This is particularly desirable in the case of apparatus not brought into use in the regular working of the plant but provided as a safeguard against unusual or emergency conditions.

#### Guarantee Period

When plant is taken over it enters its guarantee period, which in the case of expensive and novel plants should not be less than six months. The retention of a suitable proportion of the contract price ensures that the contractor makes good any defects shown up under working conditions not attributable to fair wear and tear; it would be fair also to exclude defects arising from misuse of the plant, but this is seldom embodied. Alternatively, the specification may call for the full maintenance of the plant for a period by the contractor at his cost. The application of

(Continued on page 545)





*One of 12 new 2-8-4 four-cylinder articulated locomotives for the Southern Pacific Lines. This type of locomotive has been introduced for working passenger and freight trains in coal-burning territory, and is very similar to the well-known Southern Pacific oil-burning locomotives of the same wheel arrangement introduced in 1928, except that the latter are arranged for operation with the cab leading*

Firebox steel; tank steel in boiler; smokebox plates	Bethlehem Steel Co., Bethlehem, Pa.
Boiler flange steel	Carnegie-Illinois Steel Corp., Pittsburgh, Pa.
Boiler braces; drawbar and safety bar; drawbar pins	Lockhart Iron & Steel Co., McKees Rocks, Pa.
Cab steel plate	The Weirton Steel Co., Weirton, W. Va.
Cab insulation: Fiberglas	(6) Gustin-Bacon Mfg. Co., Kansas City, Mo.
Hairinsul	(6) Johns-Manville Sales Corp., New York.
Cab seat cushions	Dunlop Tire & Rubber Corp., Buffalo, N.Y.
Cab window glass	American Window Glass Co., Pittsburgh, Pa.
Stoker	Standard Stoker Co., Inc., New York.
Grates	Waugh Equipment Co., New York.
Soot blowers	Superior Railway Products Corp., Pittsburgh, Pa.
Firedoor; sleeve joints	Franklin Railway Supply Co. Inc., New York.
Equaliser pins and bushings	Ex-Cell-O Corporation, Detroit, Mich.
Injector	Nathan Manufacturing Co., New York.
Exhaust-steam turbo feed-water heater	Locomotive Equipment Division of Manning, Maxwell & Moore Inc., Bridgeport, Conn.
Steam-heat reducing valve and stop valve	Vapor Car Heating Co. Inc., Chicago.
Steam gauge; steam-heat gauge; stoker gauge; safety valves	Ashton Valve Co., Boston, Mass.
Steam-pipe covering; smokebox tape	Union Asbestos & Rubber Co., Chicago.
Blow-off separator and discharge muffler	Wilson Engineering Corp., Chicago.
Saturated steam valves	Crane Co., Chicago.
Superheated steam valves	Walworth Co., New York.
Water gauge	Nathan Manufacturing Co., New York.
Back-pressure gauge; water-level indicator	Locomotive Equipment Division of Manning, Maxwell & Moore, Inc., Bridgeport, Conn.
Signal Foam-Meter	Electro Chemical Engineering Corp., Subsidiary of Dearborn Chemical Company, Chicago.
Speed recorder	Valve Pilot Corporation, New York.
Sander	Viloco Railway Equipment Co., Chicago.
Automatic drain cocks	The Okadee Company, Chicago.
Bell ringer	Transportation Devices Corp., Indianapolis, Ind.
Horn	The Leslie Co., Lyndhurst, N.J.
Headlight and headlight wiring fixtures	Pyle-National Co., Chicago.
Headlight generator	Sunbeam Electric Mfg. Co., Evansville, Ind.
Tender:	
Frame	General Steel Castings Corp., Eddystone, Pa.
Truck	Buckeye Steel Castings Co., Columbus, Ohio.
Wheels	Standard Steel Works Co., Burnham, Pa.
Journal-box lids	The Symington-Gould Corp., Rochester, N.Y.
Bearings	Magnus Metal Div., National Lead Co., New York.
Brake shoes	American Brake Shoe & Foundry Co., New York.
Clasp brakes	American Steel Foundries, Chicago.
Hand brakes; draft gear	W. H. Miner Inc., Chicago.
Coupler and coupler yoke	National Malleable and Steel Castings Co., Cleveland, Ohio.
Tank steel	Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Dust guard	MacLean-Fogg Lock Nut Co., Chicago.
Coal pusher	Standard Stoker Co., New York.
Lacquer	(6) Pittsburgh Plate Glass Co., Pittsburgh, Pa.
	(6) E. I. du Pont de Nemours & Co. Inc., Wilmington, Del.



## IMPROVED APPROACH TO LUCERNE

*To facilitate the handling of heavy traffic the approach to Lucerne has been widened and the signalling re-arranged with colour lights and long distance power operated points*

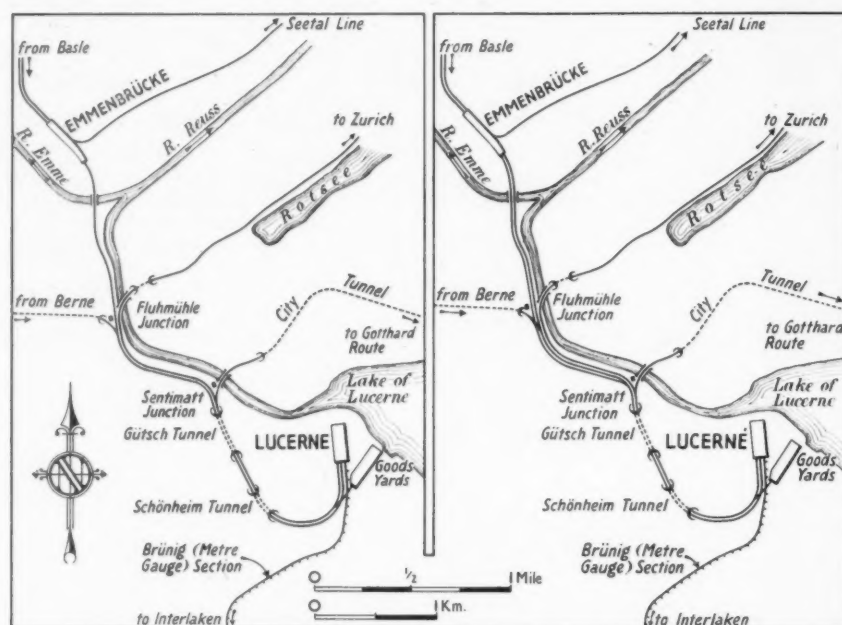
AS the first step in a comprehensive scheme of improving the approaches to Lucerne station, a second track was placed in service on June 6, 1939, between Emmenbrücke and Sentimatt junction, thus completing two tracks throughout from Basle to Lucerne with the exception of the last 2.3 km. The widening involved

the two tracks from Lucerne to Sentimatt junction are still worked as two separate single lines. The possibility of treating this section as a regular double-track line was duly considered, but the nature of the connections between trains to and from the different lines entering Lucerne makes it preferable to work the two lines independently, enabling trains to arrive or depart simultaneously on two routes.

The complete scheme, which is not likely to be proceeded with for some years to come, provides for a new double-track line from Sentimatt junction to Lucerne station for the Basle and Berne routes, with a long tunnel under the Sonnenberg, and a new approach for the metre-gauge Brünig line, at a total cost of between fr. 15,000,000 and 20,000,000. The cost of the works completed last June was approximately fr. 1,800,000.

### Power Signalling Installation

Probably the most interesting feature of the new works is the rearrangement of the signalling and its method of power operation. In our issue for October 1, 1937 (page 552), we published some particulars of the automatic single line signalling between Lucerne main station and Fluhmühle junction—where the Berne and



Track arrangements between Lucerne and Emmenbrücke before and after widening

important construction works, including two new girder bridges and heavy concrete retaining walls. Although only 2.6 km. of new track was concerned, the scheme was an important one in view of the fact that Lucerne is a busy traffic centre at the junction of the Gotthard route with several other lines, and the Fluhmühle—Sentimatt section was the busiest of all single lines on the Federal system, with an average of 98.5 trains daily in 1938.

The completion of the project has appreciably improved the handling of traffic at this point, and as the new layout includes 55-m. points of the latest type permitting of a speed of 75 km.p.h. on the diverging route, it has also been possible to reduce certain speed restrictions. The diagrams reproduced show the track arrangements before and after widening, and it will be noticed that

Basle routes diverge—which possesses several interesting features originating partly from the difficult circumstances met with, including sharp curves and tunnels. The signalling throughout the area has now been rearranged in

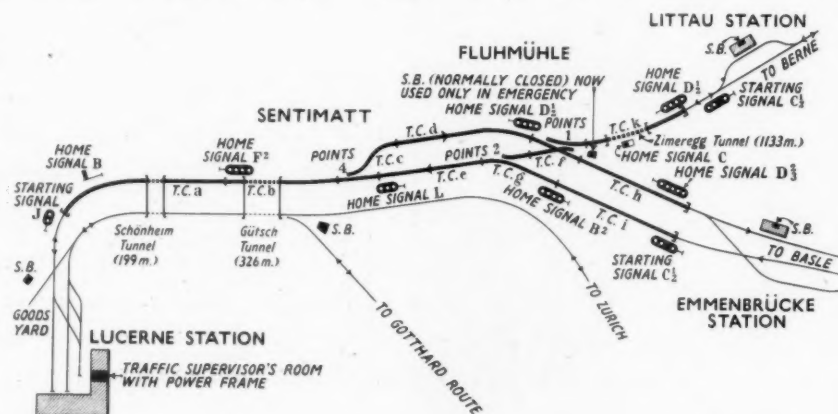
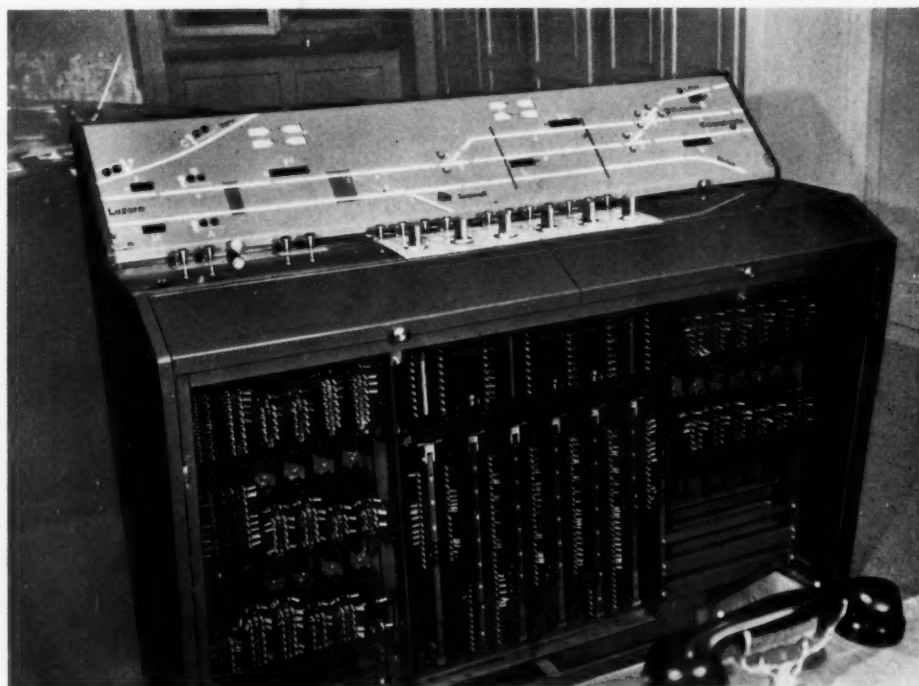


Diagram of signalling between Lucerne, Littau, and Emmenbrücke, Swiss Federal Railways



*Colour-light signal bridge between Sentimatt and Fluhmühle. A.T.C. track inductors are seen on two of the tracks ; those on the left-hand line have now been moved to the centre one*



*Traffic supervisor's power frame in Lucerne station, with illuminated diagram, controlling the whole area as far as Littau and Emmenbrücke*



*Old layout at Fluhmühle junction. Berne route diverging to left from Basle line, Zurich line on right*



*New layout at Fluhmühle junction. Berne line diverging from Basle double-track single line to Zurich on right*

accordance with the accompanying diagram, which shows the essential features of the work. The distances between the principal points concerned were given in our earlier article. The effect of the provision of the second track is to make a crossing place between Sentimatt and Fluhmühle for trains to and from Berne and to facilitate the movement of trains to Berne while a train is approaching from the Basle direction.

The points are worked by electric point machines and have the usual trailable toggle-lock gear met with on the Swiss lines, with electric detection and other standard components, including point indicator lanterns. It is interesting that the toggle gear controlling the point tongues is duplicated; this spreads the drive over an

appreciable portion of the length and helps to ensure that the closed tongue shall not be forced home by any bending action of an obstruction lodged further back. The trailable action is also made more reliable by this practice, especially in cases where a train running through the points is moving at low speed, over a very long-radius turnout. The working is controlled by the operating supervisor in Lucerne station, who, in accordance with Swiss practice, regulates all traffic movements in and out by means of a power frame which has the main operating handles arranged on the flat desk top, as in the large installation at Zurich main station, described in our issue of February 4, 1938, page 216. Behind and alongside are push buttons for effecting certain controls. The block



*Fluhmühle junction showing points operated by power and duplex toggle type trailable point locks. Line to Basle on extreme left, from Basle in centre, with Berne single line leading under bridge. Zurich single line on right. Point machine uncovered. Signal box now used in emergency only, seen in back*



working, which is achieved by directional controls in conjunction with the colour light signals, is regulated by the joint action of the responsible officials at Lucerne, Emmenbrücke, and Littau.

The illuminated diagram is of the strip light type, normally dark, and all signals are repeated thereon by coloured lights, as are also the positions of the power-worked points. The signal box previously in use in the fork at Fluhmühle junction now serves as an apparatus shelter and for local operation of certain functions in an emergency. The Sentimatt box is concerned only with the working of the Gotthard and Zurich lines. Possibly this junction will also in due course be worked on the long-distance principle, if the present scheme proves satisfactory.

#### Inductive A.T.C.

Inductive automatic train control, now standardised by the Swiss Federal Railways, has been applied to the approach indications to all home signals. An interesting

feature of the work is the automatic setting in action of the train approach signal-gongs—such a feature of the Swiss and some other Continental railways—as trains pass Fluhmühle junction. This replaces the operations formerly made by the signalman at that point. The use of track circuiting has necessitated the adoption of wooden sleepers for this section of line, although steel ones are very generally used elsewhere. As traction is single-phase, d.c. track circuits may be used, with certain precautionary equipment, on the single rail principle. The whole of the apparatus has been manufactured in Switzerland, principally at the works of Signum A.G., at Wallisellen, near Zurich. Herr Schaffer, of Lucerne, was in charge of the installation for the Engineering Department of the Swiss Federal Railways. It marks an important step in Swiss signalling and will possibly be followed by similar installations elsewhere, as there are probably many locations where they would prove as advantageous as in this case. It is understood that the savings in operating charges will be sufficient to justify the capital cost incurred within a short period.

#### The Outdoor Machinery Department—IV—(Continued from page 539)

this condition calls for some consideration. In many cases it would have to be paid for by cover included in the tender price. In the case of large contracts, particularly such as comprise sections successively completed and set to work, the contractor leaves his staff on the ground over a considerable period and during such period attends to most maintenance work; presumably the total price is unaffected. Where defects cause a stoppage of the plant after it has been set to work, the guarantee and maintenance period should be prolonged *pro rata* and should

recommence on parts replaced. Teething troubles are to be expected on all new plant, and with novel and pioneer plant are almost inevitable; while it is seldom that a designer cannot see a way to improve a plant he has evolved it may be less easy but is practically always possible to eliminate the defects of early designs and bring the plant to a condition in which it does its work satisfactorily to the department it serves; there may, of course, be special cases when those concerned do not intend to be satisfied.

(To be continued)

#### Finchley Central Station

View taken a few days ago showing one of the new tube trains of the London Passenger Transport Board on a trial trip, alongside the new down island platform. In view of war conditions, most of the other new station works here are in abeyance, and the old L.N.E.R. station buildings on the up side are being retained temporarily. It is intended eventually to have a new station building over the line, adjacent to Ballard's Lane bridge (seen in the background). On the station approach may be seen one of the special buses on the service to Edgware which has replaced the steam trains

(See page 554)



Railway Executive Committee Minute 1,203, dealing with Goods Managers' Committee Minute G.70.

**EARLIER COLLECTION OF GOODS AND EARLIER CLOSING OF STATIONS.**

AGREED - That, on the resumption of Summer Time, 25th February, the time for the collection of Goods from the public on Mondays to Fridays inclusive be extended from 4.30 p.m. to 5.0 p.m. and the station closing time for acceptance of Goods on those days from 5.0 p.m. to 5.30 p.m. A new Poster to be issued.

*Reproduction of an actual communication regarding a non-immediate R.E.C. poster*

**British Railways and the War—14**



Mr. Grasemann's poster assistant agreeing wording with the other main-line railways



Mr. Grasemann, Chairman of R.E.C. Publicity Sub-Committee, deciding actual layout of poster by means of type chart



Mr. Boyce, of James Truscott & Son Ltd., the printer, receiving the layout by telephone and interpreting it by means of chart



The finished poster exhibited on a goods depot gate

**PREPARING A ROUTINE POSTER OF THE RAILWAY EXECUTIVE COMMITTEE**

This series of pictures makes an interesting sequel to that reproduced on page 514 of our April 5 issue, showing the production of an urgent rush job

**COLLECTION & ACCEPTANCE OF GOODS**

On the resumption of Summer Time, 25th February, the time for the collection and acceptance of Goods at Stations and Depots will be extended as under:

**COLLECTION - 5 p.m.**  
(12.30 p.m. Saturdays)

**ACCEPTANCE 5.30 p.m.**  
(1 p.m. Saturdays)

BRITISH RAILWAYS

The finished poster with border of green, indicative of a goods notice. All essentially goods posters have green borders

## RAILWAY NEWS SECTION

### PERSONAL

We are officially informed that Mr. Frank Pick, Vice-Chairman of the London Passenger Transport Board, whose seven-year term of office, to which he was appointed on the establishment of the board in 1933, expires on May 18, is not submitting his name for reappointment to the Appointing Trustees, but intends to retire. For some months past Mr. Pick's health has not been entirely satisfactory and we understand that he regards the present time as opportune to relinquish office. For the moment we understand that he intends to retire to his home in the country.

Mr. Frank Pick was born at Spalding, in Lincolnshire, on November 23, 1878, and was educated at St. Peter's School, York. Subsequently he was articled with Mr. George Crombie, Solicitor, York. In 1902 he qualified as a solicitor with second-class honours, and in 1903 became LL.B. (London University) with first-class honours. In 1902 he entered the service of the North Eastern Railway Company under Sir George Gibb, the then General Manager, and worked successively in the statistics office, district superintendents' offices at Sunderland and Newcastle-on-Tyne, the rates office, and, finally, the general manager's office. In 1906, he came to London with Sir George Gibb, on the latter taking over the management of the Metropolitan District and the London Electric Railways, and, upon Sir George Gibb's retirement in 1907, Mr. Pick was transferred to the staff of Mr. A. H. Stanley, now Lord Ashfield. Mr. Pick, who has been associated with Lord Ashfield's management ever since, became Traffic Development Officer in 1909, and Commercial Manager in 1912. In these capacities he was engaged upon the building up of the system of bus routes and also the advertising department. In 1917 he was appointed by Lord Ashfield, then President of the Board of Trade, to take charge of the Household Fuel & Lighting Branch of the Coal Mines Department, under the late Sir Guy Calthrop, and was responsible for the preparation and administration of the orders governing the retail distribution of coal and its rationing for domestic use until 1919. In 1914 he visited Paris and Berlin, and in 1919 he went to New York, Cleveland,

Detroit, and other American cities to study traffic problems. In 1921 he was appointed joint Assistant Managing Director of the companies comprised in the Underground group, and in 1924 he assumed full administrative control under Lord Ashfield. His appointment as Managing Director dated from March, 1928. In the same year he was appointed a Member of the Royal Com-

the whole of the traffic movements, and it is common knowledge that, upon this scheme being put into effect with the worsening of the international situation towards the end of August last, the transport arrangements that had been evolved under Mr. Pick's supervision functioned with expedition and efficiency, and entirely without casualties. Mr. Pick was appointed a

member of the Railway Executive Committee established by Order of the Minister of Transport under the Defence Regulations on September 1 last. He is a Foundation Member of the Institute of Transport and was elected President for the year 1932; a Member of the London & Home Counties Traffic Advisory Committee; an Honorary Member of the R.I.B.A.; a Member of the Royal Commission on Police Powers & Procedure; and Chairman of the Council for Art & Industry of the Board of Trade. Mr. Pick is a Member of the Reform Club and he describes his recreations as "the study of the wider aspects of transport and seeing the world."

In order to increase coal exports to Allied and other countries, as well as to maintain supplies for all essential home purposes, the Secretary for Mines has set up a Coal Production Council to promote greater output of coal. Lord Portal has consented to be Chairman of the council, which will be composed of three representatives from the workmen's side and three representatives from the owners' side of the Joint Standing Consultative Committee with representatives of the Ministries of Transport and Shipping and of the Mines Department. Mr. R. H. Hill, C.B., is the Ministry of Transport representative. Lord Portal is a Director of the Great Western Railway.

Mr. Edward Brocklehurst Fielden, J.P., who has resigned from the board of the London Midland & Scottish Railway Company, had been Deputy-Chairman since the amalgamation in 1923. As Lord Stamp pointed out at the recent annual meeting of the L.M.S.R., one of Mr. Fielden's forbears was present 105 years ago at a meeting which resulted in the formation of the Manchester & Leeds Railway, and his family have ever since been associated with that railway and its successors. Mr. Fielden joined the board of the



**Mr. Frank Pick**

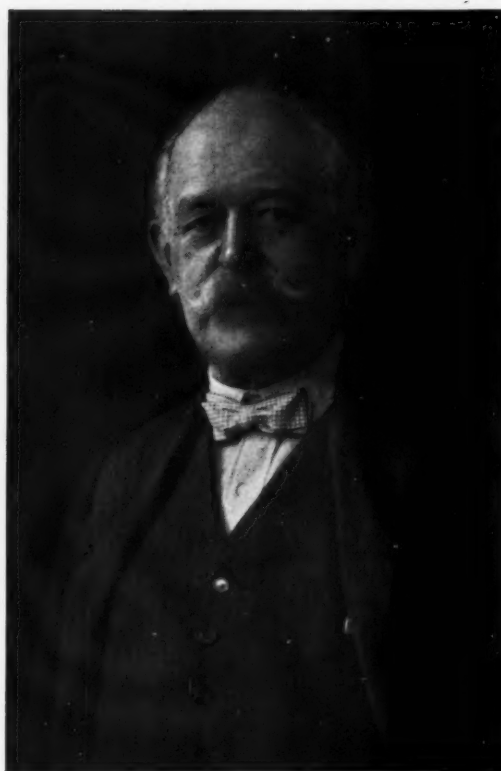
Vice-Chairman, London Passenger Transport Board,  
1933-40

mission to consider the general powers and duties of police in England and Wales in the investigation of crimes and offences. Shortly after the establishment of the London Passenger Transport Board, under Act of April 13, 1933, Mr. Pick was appointed by the Appointing Trustees as a full-time Member of the board for a term of seven years from May 18, 1933, and this is the period which is now drawing to its close. On July 1, 1933, the day the London Passenger Transport Board began its operating life, Mr. Pick was appointed Vice-Chairman. When the Government scheme for the evacuation of children and other priority classes from the London area was decided upon, Mr. Pick was asked to assume responsibility for organising



Lancashire & Yorkshire Railway Company in 1897, became Deputy-Chairman in 1903, and succeeded the late Sir George Armytage as Chairman in September, 1918. He was Member of Parliament for the Middleton Division of Lancashire for the years 1900-1906, and for the Exchange Division of Manchester from 1924 to 1935. Mr. Fielden is a Justice of the Peace for Oxfordshire and Salop, and a Director of Fielden Bros. Limited, and Chairman of the Shrewsbury Local Board of the Alliance Assurance Company. He was High Sheriff for Salop in 1911, and has been since 1920 Chairman of the Finance Committee of the Salop County Council. In 1921 he was Chairman of the Railway Benevolent Institution. During the last war he was a member of various committees associated with the textile trades, and in November, 1917, was appointed a member of the Government Committee formed to enquire into and report upon certain financial matters in connection with trade after that war.

The Hon. H. T. de B. Bingham, A.M.Inst.C.E., who, until he left India last year on leave preparatory to retirement, was Senior Government Inspector of Railways, Circle No. 5, Bombay, was recently appointed a temporary Inspecting Officer in the railway section of the Ministry of Transport, with headquarters at Metropole Buildings, Northumberland Avenue, W.C.2. Mr. Bingham, who was born in 1885, was educated at Cheltenham College and King's College, London, and was a pupil under Sir Charles L. Morgan on the L.B. & S.C.R.,



**Mr. E. B. Fielden, J.P.**

Deputy-Chairman, London Midland & Scottish Railway, 1923-1940

where he received valuable practical experience on the rebuilding of Victoria station and on numerous works in connection with the overhead electrification of that line. In 1909 he was appointed by the Secretary of State for India to be an Assistant Engineer on the Indian State Railways. After varied

open-line and construction experience he was promoted to the rank of Executive Engineer in 1917, and in 1924 was appointed to officiate as Deputy Director of Projects under the Railway Board. In 1925 he took over executive charge of the reconstruction of the Attock Bridge until 1928, when he was appointed as Superintendent of Works in the Construction Branch of the North Western Railway, and in 1929 was appointed to officiate as Deputy Chief Engineer on that system; he was confirmed in this rank in 1935. Mr. Bingham was appointed officiating Senior Government Inspector of Railways in 1934 and was promoted to be provisionally permanent Chief Engineer, on the State Railways cadre in 1937, when he held the post of Chief Engineer, North Western Railway, until proceeding to Bombay towards the end of that year. During his period of service in the administrative grades, Mr. Bingham was responsible for the supervision of numerous important construction works including three great bridges over the Chenab, Jhelum, and Indus rivers, the rebuilding of the tunnels at the northern end of the Khyber railway, and the reconstruction of the devastated railway area and colony at Quetta after the disastrous earthquake of 1935. He was confirmed as permanent Chief Engineer, Indian State Railways, in October, 1939.

Mr. Bingham relinquished his duties as Senior Government Inspector of Railways in Bombay on April 15, 1939, when taking leave preparatory to retirement from India.



**The Hon. H. T. de B. Bingham**

Appointed a temporary Inspecting Officer of Railways, Ministry of Transport



**Mr. J. Sawers**

Appointed Assistant General Manager, New Zealand Government Railways



**Mr. H. Valentine**

Second Assistant General Manager, New Zealand Government Railways, 1936-1940

Mr. J. Sawers who, as recorded in our issue of March 15 (page 385), has been appointed Assistant General Manager, New Zealand Government Railways, joined the Railways Department at Dunedin as a cadet in 1906, and served in various capacities in the Otago District until his transfer to Head Office, Wellington, in 1924. In 1928 he became Information Officer and retained that position until his appointment as Goods Agent at Christchurch in 1936. He was appointed Assistant Traffic Manager at Auckland in 1937, and District Traffic Manager, Auckland, in the next year. Mr. Sawers is a graduate of the Institute of Transport. He served with the New Zealand Expeditionary Force during the last war and at its conclusion spent some time attached to British railway companies.

Mr. H. Valentine, who, as announced in our issue of March 15, has retired from the position of Second Assistant General Manager, New Zealand Government Railways, joined the Railway Department as a cadet at Dunedin in 1898. He afterwards occupied various positions in the Otago, Southland, and Canterbury districts as clerk, assistant relieving officer, and stationmaster until 1920, when he was promoted to the position of clerk in the Chief Accountant's office. In 1922 he was made a Divisional Clerk, and in August, 1924, became Audit Inspector with headquarters at Wellington. Later in the same year he was selected to undertake the financial and accounting reorganisation of the department. He was appointed Chief Accountant in April, 1925, and in July, 1936, became Second Assistant General Manager, the position he now relinquishes on retirement. Besides his railway activities, Mr. Valentine has taken an active part in the New Zealand Society of Accountants, of which he is a Member of the Council and a Past-President.

The King has conferred a barony of the United Kingdom upon Major Rt. Hon. George Clement Tryon, M.P., who has been Postmaster-General since 1935.

#### INSTITUTE OF METALS

At the recent annual general meeting of the Institute of Metals, held in London, Lieut.-Colonel the Hon. R. M. Preston, D.S.O., was elected President. Colonel Preston is Managing Director of the Rio Tinto Co. Ltd. Dr. S. F. Dorey, Engineer Vice-Admiral Sir George Preece, K.C.B., and Mr. A. J. G. Smout, were elected Vice-Presidents. The new Treasurer is Lieut.-General Sir Ronald Charles, K.C.B., C.M.G., D.S.O. He replaces Mr. John Fry, who has retired after sixteen years of service, which has been recognised by the council's award of an Institute Fellowship. Five new Members of Council are: Dr. W. E. Alkins, Mr. G. L. Bailey, Captain F. C. Braby, Colonel P. G. J. Gueterbock, D.S.O., and Prof. D. Hanson.

Mr. Charles Sheath, whose death we recorded in our issue of January 19, has left estate valued at £35,995 (net £33,802). Mr. Sheath was a Director of the Southern Railway from 1923-39, and Secretary of the South Eastern Railway from 1899 to 1922.

We regret to record the death of Lieut.-Colonel John Irvine Lang-Hyde in Jersey at the age of 80. Colonel Lang-Hyde was born in Ontario and entered the Royal Engineers in 1883. He worked for many years in Gold Coast Colony, and in 1896 was awarded the C.M.G. for his services as a boundary commissioner and in charge of a railway survey. He was Chief British Commissioner on the Anglo-French Boundary Commission in Nigeria in 1900.

#### INSTITUTION OF CIVIL ENGINEERS

Mr. Stanley Norman Palmer, B.Sc., of the District Engineer's Office, Rhodesia Railways, has been made an Associate Member.

Major H. A. Henry, Deputy-Chairman of the Great Southern Railways, Ireland, has been re-elected Governor of the Bank of Ireland for the forthcoming year.

The Crown Agents for the Colonies have recently made the following first-class appointment: Mr. E. J. Andrews, Section Engineer, Grade III, Nigerian Railway, also Mr. W. E. Bulman, Assistant Locomotive Superintendent, is to be District Mechanical Engineer, Railway Department, Tanganyika.

Mr. Walter C. Wolfe, aged 57, for 36 years an employee of the Canadian Pacific Steamships, and for the past 18 years Superintendent Engineer at Montreal and Saint John, N.B., died recently. Mr. Wolfe's career at sea included service during the last war as engineer-lieutenant-commander. He was born at Portsmouth, and served his apprenticeship in Bootle, Lancs.

We regret to record the death in Buenos Aires, on March 1, at the age of 74 years, of Mr. Elias Thomas, a Local Director of the Paraguay Central Railway and a prominent railway engineer. The late Mr. Thomas went to Argentina in 1876, and devoted his life to railway work in that country and Paraguay.

Sayyid Omar Nadhim has been appointed Minister of Communications & Public Works in the new Iraqi Cabinet.

Two well-known Southampton dock personalities have retired after 46 years of service with the L.S.W.R. and Southern Railway Companies, namely, Mr. Herbert Sidney Hallett, who has been Docks Accountant since 1921, and Mr. William Newnam, who for the past 19 years has been Chief Clerk of Rents & Lettings, Southampton Docks. Both joined the L.S.W.R. in 1893—the year after the L.S.W.R. took over the old Southampton Dock Company.

Mr. William Barton Worthington, whose death we recorded in our issue of January 5, has left estate valued at £37,036 (net personalty £30,391). Mr. Worthington was Engineer-in-Chief of the Midland Railway from 1905-1917. In his will he directed that, among other bequests, £1,000 should be given to the Benevolent Fund of the Institution of Civil Engineers.

#### L.M.S.R. STAFF APPOINTMENTS

The following appointments have been approved by the directors of the L.M.S.R.:

Mr. R. Bagwell, District Controller, Rowsley, to be District Controller, Carlisle.

Mr. T. P. Strafford, Chief Passenger Trains Clerk, Office of Divisional Superintendent of Operation, Crewe (located at Euston) to be District Controller, Rowsley.

Mr. John Craig, Chairman and Managing Director of Colvilles Limited, has been elected President of the Iron & Steel Institute for the new two years. Mr. Fred Clements, Managing Director of the Park Gate Iron & Steel Co. Ltd., has been nominated Vice-President. The Bessemer gold medal has been awarded to Dr. Andrew McCance, who is a Director and also General Manager of Colvilles Limited.

We regret to record the death at the age of 68 of Lt.-Colonel Charles Nicholas Monsarrat, Consulting Engineer to the Canadian National Railways, who was for eight years designer of bridges for the C.P.R., later Chairman and Chief Engineer of the Quebec Bridge Commission, and for three years Consulting Engineer to the Federal Government at Montreal.

We regret to record the death on April 7 of Mr. James Calder, D.L., J.P., General Manager for Scotland, London & North Eastern Railway, from 1923 to 1934, and General Manager, North British Railway, 1918 to 1923.

Mr. J. E. Spear, previously Sales Manager, Engineering Division of British Timken Limited, has now been placed in charge of a new department which will be responsible for planning, control, and progressing of production. Before being appointed Engineering Division Sales Manager a year and a half ago, Mr. Spear was Railway Representative.

Mr. Michael Dewar, Chairman of British Timken Limited, and Mr. F. J. Pascoe, Financial Director of the company, have been elected to the board of Fischer Bearings Co. Ltd. of Wolverhampton.

Mr. J. P. Rolfs, a Director of the Anglo-Spanish Trading Company, is shortly to visit Spain, in furtherance of the objects of the company, to promote commercial relations with that country.

## TRANSPORT SERVICES AND THE WAR—33

*Guarding vulnerable points—Costain's Construction unit—Aliens and protected areas—Frontiers of Western Europe—Air line changes—German Forces in Scandinavia*

Barrage balloons are being used increasingly in this country to protect transport centres and other strategic points. As many more men are needed to man new barrage units, volunteers are being sought between the ages of 35 and 45. In addition, skilled motor drivers who have had experience as drivers of vehicles of 30 cwt. and over can now be accepted between the ages of 18 and 42. All members of the balloon crews are interchangeable when fully trained. Thus drivers will receive training in all the duties of a balloon operator, and similarly every balloon operator will eventually be taught to drive.

Men of the R.A.F. Balloon Barrage, and their balloons, are now serving overseas, two squadrons of the Command having been sent to France recently to set up balloon barrage defences at ports of disembarkation for men of the British Forces. The two squadrons with their full equipment of winch lorries, trailers, balloons, and hydrogen supplies, as well as reserve supplies and maintenance materials, were shipped across the Channel. Now they defend our troop transports from low flying attacks while the ships lie at their berths. The barrage is considered to be particularly suited for work of this kind, for the bombardment of troop concentrations, railway centres, and docks and harbour works, must be carried out at low altitudes to ensure accuracy of aim. For comparatively small and well-defined objectives of this sort, the balloon barrage is a valuable defence against low-flying aircraft.

### V.P. Duty

One of the military characteristics of the present war is that known to the soldier as V.P. duty—the guarding against enemy action and sabotage of a place of national importance classified as a "vulnerable point." Such places, many of which are railway bridges, power stations, and other transport key points, are never left day or night. Some are so very much in the heart of civilisation that the guards have to avoid electric trains passing every two or three minutes, and negotiate live rails in the blackout, while others are in remote places buried in the heart of the country. In the latter cases, one of the risks to be guarded against is that of persons dropped by parachute, as obviously a solitary enemy agent could do considerable damage to a railway bridge, with resultant serious dislocation of essential traffic. To avoid monotony that might impair efficiency, soldiers are transferred from one V.P. to another from time to time. The guard is usually changed every 24 hours. When actually on sentry duty, the soldier's instructions are simple and unambiguous, namely, to see that no unauthorised person passes, and to be on the watch continuously against any suspicious activities. As part of this unceasing vigilance, the sentry has orders to shoot if anyone challenged fails to halt, and more than once in these columns we have repeated War Office warnings to civilians to respond promptly to a challenge.

### Firm of Constructional Engineers Recruits Own Army Unit

A complete Construction Unit of the Royal Engineers, for services overseas, has been recruited from its own employees by Richard Costain Limited of London and Liverpool, the British firm of constructional engineers. It is under the command of a director of the company. The Unit includes railway engineers, concretors, track layers, steel benders, and other experts with world-wide experience. Many of the men have worked on engineering jobs in Rhodesia, Canada, Portugal, Iran, Iraq, and other parts of the Near East. The members of the Unit, familiar with the latest types of plant and machinery, are stated to be capable of undertaking every

construction problem the war is likely to place before them. Among peacetime undertakings these men have handled is the building of the mountain section of the Trans-Iranian Railway.

### L.M.S.R. Branch Line as Training Centre

For use as a training centre, the military authorities have taken over an L.M.S.R. branch line, together with some locomotives and other equipment. No ordinary passenger service runs over the branch in question, but the L.M.S.R. is continuing to operate freight service under special working arrangements in conjunction with the military authorities.

### The L.M.S.R. Coal Effort

Some facts and figures about the L.M.S.R. coal traffic are included in Lord Stamp's monthly review of the war effort, published in the current issue of *Carry On*, the L.M.S.R. wartime staff newsletter. He says that, during the period February 11 to March 4, the quantity of coal worked directly from the collieries on the L.M.S.R. averaged approximately 250,000 tons every weekday, while 70,000 tons were moved on each of the four Sundays that occurred within these dates. The total tonnage of coal moved in this period was over 5,000,000 apart from that passing on to the system from other railways. The coal left underload in the collieries on the L.M.S.R. line on March 4 was only 16,000 tons, and represented less than the stock normally kept on hand by the collieries. This, in effect, means that all the coal available for transport at the collieries had been cleared. As regards coal in London, the tonnage unloaded at L.M.S.R. London depots during the 15 days prior to March 6 was approximately 10,000 daily, and the tonnage left on hand waiting to be unloaded every day was much in excess of that quantity.

### G.W.R. Traffic Trends

Since the suspension of publication of the weekly railway traffic receipts, co-incident with the passing under Government control of the railways on the outbreak of war, particular interest has attached to such indications of the trend of traffics as have been made available from time to time. In these columns we have recorded these statistics from time to time and the latest to be made available relate to the G.W.R. During the four weeks to March 3, compared with the corresponding period of last year, coaching traffic receipts increased by 11 per cent.; merchandise receipts were 38½ per cent. greater, and coal receipts (including the hire charges on requisitioned privately-owned wagons) were 31 per cent. greater. The coaching train mileage run during the period was 18 per cent. less than that of twelve months previously, and the freight-train mileage was 11 per cent. greater, states the *Great Western Railway Magazine*. Shipments of coal at the company's South Wales docks increased by 16½ per cent. and the total dock receipts increased by 35 per cent.

According to *The Financial Times*, the Share & Loan Department of the London Stock Exchange has written to the Minister of Transport urging upon him the desirability of making available from time to time some form of traffic receipts for the main-line railway companies. The Minister is stated to have replied saying that he will give the matter consideration. It will be recalled that, as reported at page 319 of THE RAILWAY GAZETTE of March 1, the Minister in reply to a question in the House of Commons, stated that the disclosure of figures of railway traffics would not be in the national interest, and he could not therefore agree to their publication. He added that the earnings of individual companies were no longer ascertained, as the need for dividing through traffic receipts ceased with the formation of a



pool of revenue. Moreover, the aggregate figures would not be comparable with figures for a pre-war period, owing to circumstances arising out of the requisitioning by the Government of privately-owned wagons.

#### L.M.S.R. May Timetable Alterations

From the beginning of May, on Saturdays only, the 5.40 p.m. express from Euston to Manchester will leave as a through section attached to the 5.30 p.m. to Liverpool, and similarly in the up direction the 5.30 p.m. from Manchester will be attached at Crewe to the up Liverpool express due in Euston at 9.35 p.m. In Scotland a new station is being opened at Hillington, between Glasgow and Paisley, to serve the industrial estate of that name, and the existing Hillington station is renamed Hillington East; numbers of detail alterations are made in the services over this section. Additional trains are being run between Glasgow and Gourock, and Glasgow and Fairlie Pier, because of the diversion of the Clyde steamer services from Princes Pier at Greenock. This means that greater use than hitherto will be made of the piers at Gourock, Wemyss Bay, and Fairlie. As on the L.N.E.R., certain suspensions of L.M.S.R. passenger trains which became effective on February 26, because of the coal position, are being continued. Of these the most important are the 11.10 a.m. express from Leeds to Bristol and the 5 p.m. from Bristol to Sheffield; six local services were also withdrawn between Leicester, Loughborough, and Nottingham, four between Leicester and Nuneaton, and the last remaining L.M.S.R. trains between Sheffield and Doncaster. Various other single pairs of trains over different sections of the line were cancelled, and among other changes the 2.25 a.m. and 3.30 p.m. from St. Pancras to Manchester, and the 9.18 a.m. from Sheffield to St. Pancras all ceased to call at Bedford.

#### Access to the North of Scotland

An important section of the L.M.S.R. Northern Division is affected by the special Order made under the Defence Regulations, effective since March 11, whereby the area consisting of the entire Scottish mainland and islands north of the Caledonian canal has become a protected area, restricted to non-residents other than members of H.M. Forces and police, etc. As recorded at page 354 of our March 8 issue, the prohibited region is bounded roughly by a line drawn from Oban to Inverness, but excluding those places. It embraces the main (Highland) line of the L.M.S.R. from Inverness to Wick and the Kyle of Lochalsh, Strathpeffer, Black Isle, Dornoch, Thurso, and Lybster branches. Somewhat similar arrangements were in force in this region during a part of the last war. Many of the places affected are popular resorts, such as Strathpeffer and the Isle of Skye, but it is officially stated that in normal circumstances *bona fide* holiday-makers, like business travellers, will have no difficulty in obtaining permits to enter the area. Persons under 16 years of age are exempt from requiring permits.

#### Aliens and Protected Areas

The text has now been made available of the Aliens (Protected Areas) Order, made by the Home Secretary under Article 9 of the Aliens Order, 1920, which declares certain areas adjoining important naval ports to be protected areas. The areas concerned were detailed at page 521 of our April 5 issue, and it is now announced that the Order comes into force on April 15. It provides that:—

(1) An alien who was ordinarily resident on March 29, 1940, in a protected area shall not remain in the protected area without the permission in writing of the Chief Constable of the district in which he resides, or of the Secretary of State. If an application for permission is made before April 15, the alien may remain in the protected area pending the determination of his application.

(2) An alien newcomer (*i.e.*, an alien not ordinarily resident in a protected area on March 29), shall not enter or remain in the area without the permission in writing of a Chief Constable whose district is in the area. It will, however, be permissible for an alien to pass through a protected area in the course of a continuous journey from a place outside the United Kingdom to a destination within the United Kingdom, or from a place within the United Kingdom to a destination outside the United Kingdom.

The Order provides that where, in the case of an alien who is ordinarily resident in the area, the Chief Constable does not think fit to give permission to the alien to remain,

the case shall be referred to the Regional Advisory Committee. If the committee reports to the Secretary of State that permission should not be given, the alien may make representations to the Secretary of State within seven days of the notice being given to him of the Committee's recommendations. Another provision in the Order prohibits an alien from having in his possession or using in a protected area any camera or other photographic apparatus; any telescope, field glass, or similar optical instrument; or any nautical chart. Permission in writing for the possession and use of any such article may be given by the Chief Constable to an alien who resides in a protected area.

#### Frontiers

Some misunderstanding seems to have resulted from the daily press references to frontier closure, and the impression has gained currency that various frontiers are closed to all traffic, whereas the position is merely that stringent wartime restrictions have been imposed. The borders upon which the main interest is directed are naturally those separating Germany and the neutral countries that lie between the territories of the belligerents. With the outbreak of war, the Franco-German frontier was, of course, closed immediately to all traffic, but this extends for a distance of only about 250 miles, from Luxembourg to Switzerland. Moreover, for more than one half of this distance (from Karlsruhe to Basle) the Rhine forms a natural frontier, crossed only by a few railway and road bridges. In pursuance of the policy laid down by the French High Command that Rhine bridges should be blown up if important enemy forces were observed on the German bank of the river, French engineers on October 13 of last year destroyed the three Rhine bridges at Rastatt, Breisach, and Neuenberg (see page 529 of our October 20 issue). Pontoon bridges across the Rhine have also been cut, but both railway and road bridges between Strasbourg and Kehl remain intact.

Both Germany and the neighbouring neutral countries naturally tightened-up their frontier regulations, and these have become more strict as the war has progressed. From December 18 Germany closed during the night hours (10 p.m. to 7 a.m.) her frontiers with Denmark, Holland, Belgium, Luxembourg, and Switzerland, to all but normal rail traffic, and at all times the railways undoubtedly provide the safest and most expeditious means of crossing such frontiers. The positions of defence works explain, at any rate in part, the reluctance of most countries to give freedom of movement to the traveller by car or bicycle, or on foot. Obviously, the whole position of the German-Denmark frontier has now been changed by the German invasion of Denmark on April 9.

**Holland-Germany.**—In the early days of the war railway traffic between Holland and Germany continued to run on all main routes, but all through trains were withdrawn (with the exception of the Flushing-Cologne express) and local trains were instituted between stations on each side of the frontier. As the situation worsened in November, roads were barricaded hastily and bridges were laid with mines. Then, at the time of acute tension in Holland and Belgium in consequence of German military moves in Western Germany, in December last, more strict frontier regulations were imposed. On December 10 the Paris radio announced that the Dutch-German frontier was practically closed, and on December 31 the Beromünster (Switzerland) radio said the closure was complete. This would appear to be only partly true, as we gather that at no time has all communication ceased for longer periods than about 24 hours.

On January 1, however, the German frontier control on the Dutch frontier became much more stringent. The facility formerly enjoyed by Dutch residents near the frontier of being able to cross to any point within six miles of the frontier on the German side on presentation of their Dutch passports was withdrawn, and the German authorities evidently desired to restrict the local cross-frontier traffic to a minimum, to prevent information of military importance crossing the frontier, as well as to prevent deserters from the German military and civil forces fleeing the country. North of the Osnabrück-Bentheim railway line, where there were fewer German troops stationed, the restrictions do not appear to have been so drastic. A barbed wire fence was erected down the whole length of the frontier, often separating one side of



### Air Connections to Lisbon

Last week Sir Kingsley Wood told the Civil Aviation Section of the London Chamber of Commerce that the political difficulties which had so far prevented a regular air service being maintained between England and Lisbon were on the point of being overcome. He added that a number of experimental flights would be carried out this month, and there was every hope of a regular service being begun in May. Subsequently it became known that the French, Spanish, and Portuguese Governments had agreed to the operation of the service *via* Bordeaux, with facilities for emergency landings at Salamanca. Three experimental flights in each direction are to be made by the British Overseas Airways Corporation during the present month, and the first left Heston for Lisbon on Monday last, April 8, carrying the first mail ever flown between the two capitals.

The K.L.M. opened a direct air mail service between Amsterdam and Lisbon on April 2, linking Holland to the Pan-American transatlantic air line. With a landing at Oporto, Portugal, the journey to Lisbon takes 9½ hr. The route is over the sea, avoiding French territory. The distance from Amsterdam to Oporto, about 1,150 miles, is the longest flown at a single stretch on any Netherlands air line. The planes leave Amsterdam on Tuesdays and Saturdays, and are scheduled to return on Fridays and Mondays. For the time being no passengers are carried.

### Other Air Lines

Extensive war damage to the Helsinki airport has been made good, and the daily air service between Stockholm, Abo, and Helsinki was resumed at the end of March. A connection from London is operated by K.L.M. Royal Dutch Air Lines and the Swedish Air Lines, bringing Helsinki within two days' flying from England. For the first time since the outbreak of war a Swedish air liner landed at an English air port on April 2, when the Swedish Air Lines, in conjunction with K.L.M., inaugurated a one-day air connection between Stockholm and London. Regular air traffic between Finland and Estonia, which was suspended during the Russian invasion of Finland, was resumed on April 2. During seven critical months in Scandinavian affairs there has been a weekly British air service from Perth, at first through to Helsinki and later curtailed at Stockholm, but the German invasion of Denmark and Norway on April 9 resulted in the suspension of most (if not all) of the Scandinavian air lines.

On March 28 the Spanish Foreign Minister and the Italian Ambassador to Spain signed an agreement in Madrid for the establishment of air lines between Spain and Italy. A few days later an agreement was signed between Spain and Germany for establishing and working air lines, but the routes were not specified.

The air service between France and Madagascar, which was interrupted by the war, was resumed towards the end of March. There will be a twice-monthly passenger and mail service in each direction. This air line is maintained by Air Afrique; the service was resumed as far as Brazzaville late in September last.

### German Forces in Scandinavia

In the early hours of Tuesday last, April 9, German Forces invaded Denmark and Norway, crossing the Danish land frontier, and landing at Copenhagen and other places on the Danish islands, as well as at various Norwegian ports, such as Moss, Kristiansand, Bergen, Trondheim, and Narvik. Communications with the outside world have been suspended (except for German announcements from the local radio stations) and no reliable information is available about the land transport services. Denmark has accepted the occupation under protest and almost without resistance, and it would appear that internal transport by rail and road is virtually unaffected. In Norway there were temporary movements connected with the part evacuation of Oslo, and, as the Norwegian Government moved to Hamar and is resisting the invasion, considerable transport disorganisation will probably result.

The Danish air service between Shoreham and Copenhagen was suspended on Tuesday, but the Dutch and Swedish planes left Shoreham and flew as far as Amsterdam. The K.L.M. then announced that it had been ordered by the British



Sketch map of the railways of Norway, showing (inset) an enlargement of the Oslo area, and the Norwegian end of the Narvik—Luleå ore line

authorities to suspend air services between England and Holland. The last air liner left Shoreham airport at 1 p.m. on Tuesday. The same order applied to Sabena (Belgian), A.B.A. (Swedish), and D.D.L. (Danish). Services to Holland and Belgium were resumed on Thursday. The British Overseas Airways Corporation plane which should have left Perth on Tuesday for Stavanger, Oslo, and Stockholm was cancelled.

The British Postmaster General announced on the same day (April 9) the temporary suspension of the mail services, including airmails, and the money order services to Denmark, Estonia, Finland, Greenland, Latvia, Lithuania, Norway, and Sweden. The telegraph and telephone services to these countries are at present subject to indefinite delay.



## Tube Trains to High Barnet

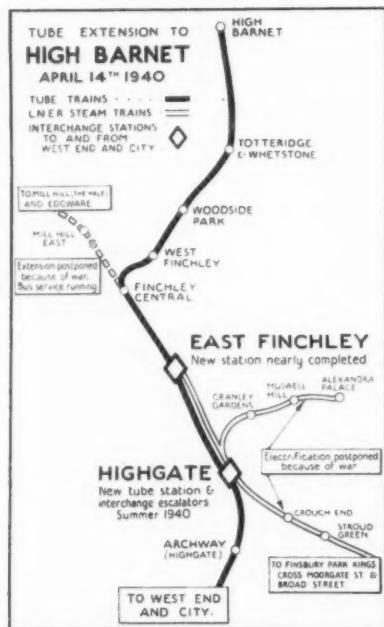
On Sunday next the Northern Line tube trains of the London Passenger Transport Board are being extended to High Barnet in replacement of L.M.S.R. and L.N.E.R. steam trains, providing the first direct railway link to the West End

The second portion of the £45,000,000 London improvements scheme of the L.P.T.B., the L.N.E.R., and the G.W.R. to be brought into service since the outbreak of war will be opened on Sunday next, April 14, when Northern Line tube trains of the London Passenger Transport Board will begin to run beyond East Finchley over the  $5\frac{1}{2}$  miles of newly-electrified L.N.E.R. tracks to High Barnet, thus providing the first direct railway link between High Barnet and the West End. High Barnet is 12 miles from Charing Cross and tube trains will run between Morden and High Barnet, a distance of 23 miles. The extension has been undertaken jointly by the London & North Eastern Railway and the London Passenger Transport Board and is part of the £45,000,000 programme of extensions and new works in the London Transport Area.

The line from Finchley Central to High Barnet was opened on April 1, 1872, almost exactly 68 years ago. A bell dated 1869 and bearing the name Mears & Stainbank has been at High Barnet station since the opening of the line and has been rung 1 minute before the departure of every train. The bell will be presented to the Curator of the Barnet Museum.

### New Services

With electrification a greatly in-



The newly-electrified L.N.E.R. line to High Barnet, which will be served by London Transport tube trains from Sunday next

creased train service at regular intervals will be given. In peak hours there will be a train every 10 min. from High Barnet and one every 5 min. from Finchley Central (formerly called Finchley, Church End, but renamed on April 1). In the mornings, for instance, between 7 and 10 a.m. there will be 20 trains from High Barnet and 38 trains from Finchley Central, compared with 11 steam trains during these hours today. In the slack hours of the day there will be trains every 12 min. from High Barnet and every 6 min. from Finchley Central. Altogether, in place of the present weekday service of 78 steam trains to and from High Barnet and Finchley Central, there will be 212 tube trains to and from High Barnet and 396 tube trains to and from Finchley Central. Typical journey times to the West End will be: High Barnet to Tottenham Court Road 30 min., and Finchley Central to Tottenham Court Road 20 min.

### Fares

Through ordinary fares and season ticket rates, and workmen's tickets which will be issued up to 7.30 a.m. have been arranged from the L.N.E.R. stations to be served by the tube trains to a wide range of London Transport underground stations.

As we point out in an editorial note at page 529, owing to the necessity of giving priority to engineering works of national importance, the proposed electrification of the L.N.E.R. line from Finsbury Park to Alexandra Palace and from Finchley Central to Edgware, together with the proposed tube extension beyond Edgware to Bushey Heath, have had to be postponed. The steam trains have since September been withdrawn between Finchley and Edgware, and replaced temporarily by a bus service. There will be 11 steam trains (L.N.E.R. and L.M.S.R.) each way between East Finchley and King's Cross, Moorgate, or Broad Street in the peak hours. The service of steam trains between Alexandra Palace and King's Cross, Moorgate, and Broad Street will remain as at present. The new tube station beneath the Highgate (L.N.E.R.) station is to be opened this summer, and, by the end of this year or early in 1941 the rebuilding of Highgate station will be completed and a new entrance on Archway Road with escalators to the ticket hall will be opened.

### Relief of Golders Green Branch

It is expected that, after next Sunday, many passengers who now travel by bus to join the Northern Line at Golders Green will use Finchley Central station instead. This should afford relief to the Golders Green branch, in

addition to the relief already given by the extension of Bakerloo trains to Stanmore on November 20, 1939.

### Engineering Works

The cost of the extension to High Barnet, including rolling stock, is approximately £1,350,000. Apart from the electrification of the L.N.E.R. line between East Finchley and High Barnet, the line has been equipped with automatic colour-light signalling. Four new signal boxes and three new substations have been built. Considerable re-arrangement of the tracks has been necessary at East Finchley, Finchley Central, and High Barnet.

### Parcels and Luggage in Advance

Parcels and passenger-luggage-in-advance will not be conveyed in the tube trains, but the L.N.E.R. has arranged collection and delivery services by road motor vans in the districts concerned which, in addition to meeting the local requirements of the district, will connect with L.N.E.R. train services in London. Orders for the collection of parcels and passenger luggage can be left at any of the stations on the High Barnet line and will be telephoned immediately to special depots set up to deal with parcels, etc., traffic. There will be five town parcels depots in the district, namely, at High Barnet, Tottenham, Woodside Park, Finchley Central, and East Finchley, where members of the public may also hand in consignments for rail conveyance to all parts of the country.

### Forthcoming Meetings

- Apr. 12 (Fri.).—North Devon & Cornwall Junction Light Railway Company (Annual general), Central station, Exeter, at 3.15 p.m.
- Apr. 17 (Wed.).—Quebec Central Railway Company (Annual general) offices of the Canadian Pacific Railway Company, Montreal, at noon.
- May 1 (Wed.).—Canadian Pacific Railway Company (Annual general) at the offices of the company, Montreal, Canada, at 12 noon.

### Forthcoming Events

- Apr. 13 (Sat.).—Institute of Transport (Metropolitan Graduate), at Inst. of Electrical Engineers, Savoy Place, W.C.2, 3 p.m. "Suburban train operation," by Mr. Charles F. Klapper.
- Apr. 17 (Wed.).—Institution of Locomotive Engineers (London), at Inst. of Mechanical Engineers, Storey's Gate, S.W.1, 5.30 p.m. "The latest developments carried out in France to steam locomotives," by M. Chan.
- Apr. 23 (Tues.).—London School of Economics, at Canterbury Hall, Cartwright Gardens, W.C.1, 5 p.m. "The problem of railway charges (1)," by Mr. Roger Gibb.
- Apr. 27 (Sat.).—Permanent Way Institution (Manchester-Liverpool). Inspection of F.B. 131 lb. and 110 lb. track, conducted by Mr. N. W. Swinnerton.
- Apr. 30 (Tues.).—London School of Economics, at Canterbury Hall, Cartwright Gardens, W.C.1, 5 p.m. "The problem of railway charges (2)," by Mr. Roger Gibb.
- May 7 (Tues.).—London School of Economics, at Canterbury Hall, Cartwright Gardens, W.C.1, 5 p.m. "The problem of railway charges (3)," by Mr. Roger Gibb.

## Institute of Transport

After-luncheon address by Mr. Frank Pick

Mr. Frank Pick, Vice-Chairman of the London Passenger Transport Board, was the speaker at the last monthly luncheon of the present session of the Institute of Transport, which was held at the Charing Cross Hotel on April 8. Mr. Theodore E. Thomas (President) was in the Chair, and among those present were:—

Messrs. W. A. Agnew, F. P. Arnold, A. W. Arthurton, Lord Ashfield (Past President), Messrs. C. Barman, W. J. Brooker, Capt. A. Bull, Messrs. R. Carpmal (Member of Council), John Cliff, B. W. C. Cooke, F. W. Crews (Assistant Secretary), W. P. N. Edwards, Evan Edwards, Ivor Fraser, W. H. Gaunt, W. S. Graff-Baker (Member of Council), A. Winter Gray (Secretary), T. Graham Homer, J. A. Kay, R. Kelso (a Vice-President), C. F. Klapper, D. R. Lamb, Charles E. Lee, Brig.-General Sir Osborne Mance, Messrs. G. J. Ponsonby, V. A. M. Robertson, F. Scothorne, C. J. Selway (Member of Council), C. E. R. Sherrington, Frederick Smith (Member of Council), Alex. J. Webb.

Mr. Pick said that he had been in the news lately. He had seen in the newspapers that he was older than he thought; that he was much more tired than he knew; that he was to have a Government post of which he knew nothing. One salient fact remained; he had not submitted his name for re-appointment to the London Passenger Transport Board. Now virtually at the end of an active career, he found himself unable to pronounce the sententious opinions, often taken for wisdom, which might seem appropriate. Fortunately an after luncheon address need not be serious, so he was going to speak a little flippantly.

The war had given unexpected opportunities for widening his education. At one time he had lived upon the blessed word "co-ordination," but now he dare not say what it meant in transport nor how much or how little it might mean. He had also been guilty of speaking of "a reasonable return on capital," without precision, to find that its interpretation varied with time and circumstances more than he had thought possible.

Lately he had been asked to give his mind to a study of the word "prestige" and had found that the dictionary defined it first as "delusion" then as "illusion." It was spoken of as though it were something substantial, something created by propaganda or advertisement, or something which grew out of testimonials like the bubble reputation of a patent medicine. But really it was only a quality, distilled out of efficient and convenient service sustained over many years; it was something exhaled as a spirit of honest and straightforward dealing again over many years; something which if sought, was lost, but which was given if the job was done well and truly. A prestige that needed advertisement or publicity was a contradiction. The boast which was buttressed with statistics was unconvinc-

ing to a suffering passenger or consignor or consignee.

He had had also to reflect recently on the differences between accounts and statistics, between facts and approximations to facts, and between facts and the manipulation of facts. While he had suspected statistics he had not suspected accounts until recently. Now, in connection with war control, the question had been raised whether accounting was an art or a science. The form of Government control was to blame for what had happened. It had made accounting by no means plain and straightforward.

But all this was simple to the complications which arose when one considered "reasonable" in railway parlance. Tens, nay, thousands of pounds had been spent in the last fifty years in interpreting what was "reasonable." It was not a matter which could be decided by a jury, for Lord Esher in 1886 had held that the judge must decide. The facts with regard to reasonableness, it had been held later—in 1888—must not be left to a jury. Therefore reasonableness had ceased to be a question for laymen and had become a matter for legal experts. There was at least the consolation that there could be no decision on what was "reasonable" except in relation to a set of facts. There was the further subtlety of "not unreasonable" which covered all the marginal cases between reason and unreason. This word "reasonable" governed all current rates and fares and charges.

Was there any reason to be found in the present welter of classification of goods, exceptional rates, contract rates, special rates and arrangements? Could there be reason in a system built up on obsolete and conflicting principles such as: what the traffic would bear; what could be got in circumstances of competition; what covered the cost of service with or without a fair reward for the execution of the service; what opportunist bargaining of the past had introduced and hardened into custom? A clean sweep was needed and in this the burning furnace of war would help.

Reasonable had nothing to do with rational—nor had rationing which restricted fuel for road vehicles.

Reasons which had been put forward why goods could not go by means other than road included: their tenderness to shunting operations; their demand for dispatch; their insusceptibility to handling; the shortage of packing materials; even the fickleness of our English weather and, as a climax, the truly shameful allegation that the railways could not take the traffic when, like good common carriers, they would take anything and everything they could get hold of!

He invited his listeners to think of

the railways striving to conserve petrol and fuel oil by relieving the roads of traffic, and thus saving wear and tear of roads into the bargain. They were taking on themselves awkward and maybe unremunerative movements in a simple-minded endeavour to serve the national interest—striving at the same time to honour whatever was meant by another phrase, the "square deal," which he had never understood!

All this arose from rationing. Once more the pause and purge of war would allow a review of this problem of transport as a whole. In the long run function would govern, unless Government itself interfered. By "function" he meant fitness of transport measured by economy, efficiency, and convenience. All other considerations would be thrust aside. Transport to be healthy and prosperous would be compelled to re-adjust itself to the fulfilment of its purpose and nothing else.

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**VOLK'S ELECTRIC RAILWAY.**—Volk's Electric Railway, Brighton, the first section of which was opened for traffic on August 3, 1883, passed into the hands of Brighton Corporation on April 1.

**B.S.S. FOR ENGINEERS' PRECISION TOOLS.**—Specifications have recently been issued for vernier callipers, No. 887, and for slip (or block) gauges, No. 888. Copies may be had from the British Standards Institution, 28, Victoria Street, London, S.W.1, price 2s. 2d. post free.

**THE SWANSEA & MUMBLES RAILWAY IN WARTIME.**—The famous Swansea & Mumbles Railway has come into its own again under war conditions, now that fuel limitations have restricted bus services. Speaking at the annual meeting of the South Wales Transport Co. Ltd. (the lessee company) on April 4, Mr. Sidney E. Garcke, the Chairman, said that, as the railway operates by electricity generated from home-produced coal, the company is able by its agency to give the public in that particular district a full service of trains, and correspondingly the number of buses running on the adjacent road on imported liquid fuel can be reduced.

**ARGENTINE RAILWAY EARNINGS.**—The gross receipts of the Argentine railways for the first five months (July-November) of the financial year 1939-40, amounted to 201,026,000 pesos m/n., or 10,074,000 pesos (5.3 per cent.) more than in the corresponding period of the preceding financial year. The British-owned railways accounted for 139,184,000 pesos of the total, an increase of 6,038,000 or 4.5 per cent. The improvement was wholly in goods traffic, the receipts from which, over the whole system, amounted to 146,045,000 pesos, or 7.9 per cent. more than in 1938-39, passenger receipts being 36,023,000 pesos, or 1.6 per cent. less. Goods tonnage was 18,985,000, or 9.1 per cent. more, and the number of passengers was 69,763,000, a small increase of 1.8 per cent.

## RAILWAY AND OTHER MEETINGS

### The British Automatic Co. Ltd.

The ordinary general meeting of the British Automatic Co. Ltd. was held at Winchester House, Old Broad Street, E.C., on April 4, Major R. D. K. Curling, Chairman of the company, presiding.

The Acting Secretary (Mr. Ivan B. Lindley), having read the notice convening the meeting and the auditors' report,

The Chairman said that on the assets side of the balance sheet, machines and fittings at £417,612 showed an increase of £7,738, which was made up of the cost of new machines purchased during the year less sales £15,722, less amounts written off in respect of machines scrapped and sold £7,983. Freehold and leasehold premises, plant, machinery, etc., showed a decrease of £579, and this was due entirely to depreciation written off during the year, less the cost of additions to plant and machinery, etc.

On the liabilities side of the balance sheet debenture stock outstanding had been reduced from £240,096 to £233,469 by the purchase of £6,450 of stock for cancellation, and a reduction in interest accrued of £177. Amounts due to subsidiary companies showed a reduction from £30,546 to £28,348. Sundry creditors including taxation reserve at £76,117 increased by £10,589; £6,803 of this represented extra accounts outstanding and reserves for site rentals, all of which had since been paid. The balance was an increase in taxation reserve of £3,786.

The profit and loss account showed that the net profit, subject to depreciation of automatic machines, amounted to £51,256 against £50,368 in 1938. To the year's profit should be added the balance of the profit & loss account brought forward from 1938, £7,539 making a total of £58,795 from which had been allocated £34,246 to depreciation & renewals account. This left £24,550 and the directors recommended the payment of a dividend of 4½ per cent., free of tax, an increase of one quarter per cent. over last year, which would absorb £17,000 leaving £7,550 to be carried forward.

In his speech last year the Chairman had reported that 1938 had been a difficult year, but with the help of the business obtained at the Empire Exhibition, Glasgow, the company had managed to show a slight improvement over 1937. Therefore he was very pleased to be able to show a still better result in 1939, notwithstanding very much worse conditions than in the previous year, and with no Empire Exhibition to help. In the first half of the year, with slightly increased receipts and reduced expenditure, the company had been showing an increased profit over 1938 in the automatic business, but, with the approach of summer when the greater part of the company's profits were earned, the tense international situation was al-

ready having a depressing effect on the business. The immediate effect of the declaration of war was the closing down of 90 per cent. of the company's amusement sites, and a serious falling off in receipts from weighing machines due to the black-out. With the closing of 23 important stations on the London underground railways for a long period and the difficulty experienced by people in locating the company's machines in darkened railway stations, the receipts from vending machines also suffered. This section of the business was showing some signs of recovery now that the stations had been re-opened and people appeared to be settling down to the new conditions.

The improvement in profit obtained in the first half of the year was quickly wiped out and by the end of the year a reduction in profit from the automatic machine business had taken place.

For some years past the results obtained by Reeves Limited, the company's chocolate factory in Glasgow, had shown a steady improvement and, in spite of the difficulties of this year, the improvement had been more than sufficient to cover the profit reduction in the automatic business. The directors were accordingly able to show a net increase in profit for the year, and he congratulated the general manager on having effected a saving of no less than £8,770 in management expenses, repairs to machines, and stores, etc.

He felt, however, that he should strike a warning note. During the year the Government had introduced Excess Profits Tax. Under the wording of the Act the payment of the tax was to be borne by the parent company of any group of trading companies, and in their case Associated Automatic Machine Corporation would have to pay it for the whole group, and no provision had been made in these accounts for this tax. It was, however, anticipated that the wording of the Act might be altered so as to make all companies in a group jointly and severally responsible for Excess Profits Tax, and if this happened the shareholders must expect in the future for it to appear in the accounts as a substantial charge against profits.

The company's chocolate manufacturing business, Reeves Limited, had also been affected by the rationing of sugar supplies which is likely to restrict their output. Relations with the railway companies continued to be satisfactory, and the Chairman expressed his appreciation to the officers for the very willing and helpful way in which they had at all times met the company in all matters of mutual interest.

In the past it had been his practice to give some indication of the outlook for the current year but in these times as any forecast had to be in the nature of a guess he could only say that they had an organisation which in the past had shown itself adaptable and flexible enough to meet fresh trials and new conditions and, whatever the future

held, shareholders would be assured that they would make the most of opportunities. The chairman concluded by thanking his colleagues on the board and expressing his great appreciation of the keen hardworking staff, from the general manager, Mr. F. L. Timmins, downwards.

The report and accounts were unanimously adopted.

### Vickers Limited

The annual general meeting of Vickers Limited was held on April 3, at the Hotel Victoria, London, W.C.2. Mr. A. A. Jamieson, Chairman of the company, presided.

The Chairman, in his review (which was circulated with the report and accounts), said that the changeover from peace to war conditions had been carried out by Vickers-Armstrongs without any disturbance, and that the company was meeting the requirements which the Government had entrusted to it. Great extensions had been and were being made to the company's manufacturing facilities, but in spite of these Vickers-Armstrongs could not have attained the measure of success in output which it had achieved had it not adopted the policy of sub-contracting on a large scale. There had been a large expansion in turnover, and this was reflected in a comparison of the figure of work in progress of £32,623,460 at December, 1939, with £24,721,695 in the previous year.

The turnover of English Steel Corporation last year had shown an increase in all departments, and, at the request of the Ministry of Supply, the corporation was expanding still further its capacity for the production of special steels. The Darlington Forge had been engaged mainly on armament work throughout the year; work had been scarce for Taylor Bros. in the early part of 1939, but that undertaking had been more fully employed since the outbreak of war. Fifth Vickers Stainless Steels Limited had earned larger profits than for the preceding year. The company's capacity had been increased in order to maintain commercial work, and to deal with the larger tonnage arising from war requirements.

The Metropolitan-Cammell Carriage & Wagon Co. Ltd. dividend was again 8 per cent. free of tax and £100,000 had been placed to general reserve. The balance sheet disclosed a strong position. The profits showed a reduction which was brought about by increased taxation. The company had experienced some shortage of wagon orders during the early part of the year, but generally the works had been well employed. It had been possible to maintain to an important extent the company's export trade, which was so vital to the country at the present time, a particularly welcome contract being for wagons for Turkey, a country which for many years had drawn its supplies almost entirely from Germany.



Orders had also again been received for wagons for the South African Railways and coaches for Thailand. During the year the company had been employed on important Government work which had tended to increase since the outbreak of war.

The results of all the other subsidiary companies had been affected by factors similar to those already referred to. In certain cases where the standard for excess profits tax was low, the profits which remained after providing for taxation were meagre. The group was working at full pressure with one thought uppermost in the minds of each individual—namely, to do his or her utmost to win the war. The whole organisation was working under great strain, but there were no signs whatever of the strain being too great or the burden too heavy.

The report and accounts were adopted.

### Derwent Valley Light Railway Company

The annual general meeting of the Derwent Valley Light Railway Company was held at 16, Coney Street, York, on April 4. Mr. Claude W. Thompson, Chairman of the company, presiding.

The Chairman, in the course of his speech, said that the total tonnage carried amounted to 58,379 tons against 52,979 tons in 1938—an increase of 5,400 tons, which could be regarded as satisfactory in view of the difficult conditions which had operated as a result of the outbreak of war. The agricultural position, he thought, could be said to have slightly improved in 1939, and this was reflected by increased carryings of potatoes, grain, manure, carrots, and particularly sugar beet, which was increased by nearly 1,000 tons. Coal and coke traffic was heavier by 5,650 tons, and the facilities the company could offer at its York station by giving side-door deliveries—thus eliminating slack—were being steadily appreciated both by merchants and the ordinary public.

Live stock receipts were practically the same as last year, but this traffic might in future show a decrease as a result of the Government meat control, unless farmers could be persuaded to forward their stock to York market by rail. The company could offer very low rates, and a good service for conveyance into Foss Islands, L.N.E.R., station, and he appealed for more support in this direction.

The gross receipts for the year amounted to £8,065—an increase of £349, and the expenditure was £6,345—a decrease of £22—notwithstanding the fact that the loss on collection and delivery amounted to £318. This loss was incurred as a result of certain rates which included free collection and/or delivery, and the arrangement operated very adversely in the case of small companies with a short mileage.

He drew attention to the percentage

of expenditure to traffic receipts, i.e., 73.55 per cent.; this figure compared very favourably with that of other railway companies and went to prove that the undertaking was very economically managed. The permanent way, stations, buildings and property had been maintained in good working

order and repair during the past year. He would not like to forecast the effect of the war on the Derwent Valley Light Railway, but he thought he could safely say that it can look forward to heavier tonnages of commodities, although operating costs were bound to show a considerable rise.

## STAFF AND LABOUR MATTERS

### Decisions by Chairman of Railway Staff National Tribunal

When Sir Arthur Salter was appointed Under-Secretary to the Ministry of Shipping he resigned the Chairmanship of the Railway Staff National Tribunal, and the Ministry of Labour appointed Sir John Forster as Chairman of the tribunal.

Two decisions, dated April 2, 1940, by the new Chairman of the tribunal, recently published, are:—

*Decision No. 11* deals with a claim by the National Union of Railwaymen that men engaged on sorting parcels into various groups, irrespective of the character of the sorting, are sorting parcels within the meaning of the definition applicable to the grade of leading parcel porter. To illustrate the matter in issue the Union set out in its claim details of methods of working, which included counting parcels received from vans, examining addresses, sectionalising, according to destination, parcels on different barrows, noting discrepancies, checking of special transfer traffic, affixing stamps, etc.

For the union it was contended that if a parcel porter was engaged in sorting of the type illustrated, in addition to marking and checking, normally for a full shift, the grade of leading parcel porter should be applied to him, and had in fact been so applied to him by the companies up to about November, 1932. The companies contended that sorting of the type illustrated by the union was only primary rough sorting of the simpler kind and might, therefore, properly be included in the work of men in the grade of parcel porter.

The Chairman decides that the grade of leading parcel porter should be applied to men engaged in sorting as illustrated by the union, in addition to marking and checking, normally for a full shift.

*Decision No. 12* deals with a claim by the National Union of Railwaymen that clause 9 of the memorandum of agreement for railway male supervisory staff, dated April 20, 1920, governing the payment of expenses, applies to any period during which a man is required to lodge away from home. The claim was submitted as one of interpretation of clause 9 of the agreement, which provides for the following scale of expenses:—

Men in classes	Day or turn of duty	Night when lodging away from home	Day and night when lodging away from home
3, 4, and 5	3s. 0d.	7s. 6d.	10s. 6d.
1 and 2	3s. 6d.	9s. 0d.	12s. 6d.

It also provides that the supervisors named in the clause, which includes permanent way inspectors, will be

authorised to charge expenses when travelling on the company's business, on the understanding that they perform a full turn of duty, on each day to which the expense allowance applies, i.e., that the weekly short turn is excluded from the arrangement.

The question which the Chairman had to decide was, whether on a proper interpretation of clause 9, a permanent-way inspector, class 3, whose home station is at "A," and who is required temporarily to transfer to "B" for a period of approximately nine months, in order to release for other work another permanent-way inspector, is entitled during the period of his transfer to receive expenses at the rate in the clause laid down.

It was contended by the union that clause 9 applies to any period that a man is lodging away from home, and that day and night expenses should be paid to men transferred to another station for a period which necessitates their lodging away from home.

The Chairman states that in his opinion, clause 9, looked at, as for the purpose of "interpretation" it must be looked at, as a whole, operates upon its true construction, to secure payment of travelling expenses at the appropriate rate to classes, specifically defined, the discharge of whose ordinary duty of necessity involves travelling as one of its normal and usual incidents.

The acceptance of the argument put forward on behalf of the union would necessarily involve construing the words "when travelling on the company's business" appearing in clause 9, as though they were synonymous with the words "temporarily transferred upon the company's business," a construction which would give to the latter words a meaning which they could not, in their plain, ordinary and natural sense, properly bear.

The Chairman finds, as a matter of interpretation, against the claim.

### Chemical Workers' Wages

The Joint Industrial Council for the chemical industry has agreed on the following advances:—

Three-farthings an hour from the beginning of the first full pay week in April, and a

Further one-farthing an hour from the beginning of the first full pay week in July.

Pieceworkers to receive an equivalent advance.

Women and youths to receive an advance equal to 50 per cent. of that for men.

## NOTES AND NEWS

**Spanish Potatoes for Britain.**—Representatives of British, French, and Spanish railways, in conference with exporting interests at Cerbere on April 5, agreed on methods of transport of potatoes destined for Britain, says a Reuters message.

**Camps and Their Design.**—Mr. William H. Hamlyn, F.R.I.B.A., Principal Architect, L.M.S.R., delivered the Bossom Gift Lecture for 1940, Chadwick Trust, in London, last Tuesday, April 9. The subject was: "Camps: Their Design, Construction and Hygienic Arrangement."

**New Station at Hillington.**—A new L.M.S.R. station for passenger, parcels, and goods train traffics was opened at Hillington on Monday, April 1. It has been built principally to serve the factories in the Scottish Industrial Estates; train services are given from and to Glasgow and Paisley. The new station is called Hillington, and the older Hillington station has been re-named Hillington (East).

**Effects of Coal Strike in New South Wales.**—A serious situation appears to be developing in New South Wales due to the coal strike. Train, tram, and shipping services are being curtailed, especially by cancellation of certain long-distance and many suburban trains. It is reported that 4,500 out of a total of 6,500 Broken Hill steel workers at Newcastle therefore ceased work on April 3, and that the miners were refusing a hearing of their case by the Arbitration Court.

**Argentine Transandine Affairs.**—An originating summons has been issued upon the application of the Argentine Transandine Railway Co. Ltd. (the transferor company) for an order pursuant to Section 154 (2) of the Companies Act, 1929, that all property, rights, and powers of the transferor company not already transferred to and vested in Argentine Transandine Holdings Limited (the transferee company) be transferred without further act or deed to the

transferor company; that any outstanding liabilities and duties of the transferor company become the liabilities and duties of the transferee company; that all proceedings now pending by or against the transferor company be continued by or against the transferee company; and for the dissolution of the transferor company. The summons is directed to be heard before Mr. Registrar Stiebel on April 23.

**First Section of Teheran-Tabriz Line Opened.**—Dr. Ahmed Deftari, Prime Minister of Iran, officially opened the first 90-mile length of the Teheran-Tabriz railway in March. The new railhead is at Kazvin, where a luncheon was given by the Governor to distinguished guests, who had travelled from the capital by special train. Work upon the new line beyond Kazvin is proceeding steadily and some plate-laying has already been done, states a Reuters message.

**Hoffmann Manufacturing Co. Ltd.**—At the annual meeting of the Hoffmann Manufacturing Co. Ltd. it was stated in the course of Mr. Robert Armitage's speech that, at the instance of the Government the company was erecting at its own cost a new factory in another part of the country. The directors had come to the conclusion that, in connection with these new works, a separate company should be formed, and this had been registered under the name of Hoffmann Gloucester Co. Ltd.

**Level Crossing Accidents in Canada.**—According to the 35th annual report of the Canadian Board of Transport Commissioners, out of 243 level crossing accidents reported in Canada last year, 80 were occasioned by motor-cars or other motor vehicles crashing into the side of trains, causing death to 19 persons and injuries to 148. Of these 80 accidents, 41 occurred in Ontario and 21 in Quebec. The board points out 149 accidents occurred in

the daytime when visibility was presumably good, and only 94 took place at night. In 52 instances the level crossings were protected by watchmen, gates, bells, and wigwag signals.

**First Mobile Railway Workshop Train.**—The name of the firm which supplied the 31½-kVA 3-phase alternator for the workshop train for the B.E.F. described in our March 29 issue was Mawdsley's Limited of Dursley, Gloucestershire.

## British and Irish Railway Stocks and Shares

Stocks	Highest 1939	Lowest 1939	Prices	
			April 9, 1940	Rise Fall
G.W.R.				
Cons. Ord. ....	38	21½	48	—1
5% Con. Pref. ....	92	71	100½	—
5% Red. Pref. (1950) ..	98	83	102½	—
4% Deb. ....	103	91	104½	+1
4% Deb. ....	105½	93½	107½	—
4% Deb. ....	110	99	111	—
5% Deb. ....	121	109½	122½	—
2½% Deb. ....	63½	54	65½	—
5% R. Charge ....	117	104	116	—
5% Cons. Guar. ....	111	96½	114	—
L.M.S.R.				
Ord. ....	17	9½	23½	—½
4% Pref. (1923) ....	46½	20	53½	—
4% Pref. ....	63½	37½	64½	—
5% Red. Pref. (1955) ..	83	58½	90	—
4% Deb. ....	98	85	99½	+1
5% Red. Deb. (1952) ..	109	101½	107	—
4% Guar. ....	87½	73	89½	—½
L.N.E.R.				
5% Pref. Ord. ....	5½	3½	6½	—½
Def. Ord. ....	3½	1½	3½	—½
4% First Pref. ....	38½	19	52	—½
4% Second Pref. ....	15	7½	20½	—
5% Red. Pref. (1955) ..	55	38	72½	—
4% First Guar. ....	78½	60	79½	—1
4% Second Guar. ....	68½	47	72½	—1
3% Deb. ....	71½	57	72½	—
4% Deb. ....	93	76	95½	—
5% Red. Deb. (1947) ..	106½	98	103½	—
4% Sinking Fund Red. Deb. ....	104½	96	102½	—
SOUTHERN				
Pref. Ord. ....	78	46½	70	—
Def. Ord. ....	19½	7	21½	—½
5% Pref. ....	100	76	100½	—
5% Red. Pref. (1964) ..	102½	94	102½	—
5% Guar. Pref. ....	116½	103	114	—
5% Red. Guar. Pref. (1957) ....	112½	102½	111	—
4% Deb. ....	103	91½	102½	—
5% Deb. ....	118½	109½	122½	—
4% Red. Deb. (1962- 67) ....	106	98	104½	—
4% Red. Deb. (1970- 80) ....	102	96	103½	—
FORTH BRIDGE				
4% Deb. ....	98½	81	92½	+2
4% Guar. ....	95	80	92½	+2
L.P.T.B.				
4% "A" ....	115	103	109½	—
5% "A" ....	123	106½	117½	—
4% "T.F.A." ....	105	100½	104	—
5% "B" ....	117½	102	110½	+1
5% "C" ....	84	63½	45½	+1½
MERSEY				
Ord. ....	24½	17½	25½	—
4% Perp. Deb. ....	93½	88½	91	—
3% Perp. Deb. ....	77	65½	65½	—
3% Perp. Pref. ....	55	49½	54½	—
IRELAND BELFAST & C.D.				
Ord. ....	6	3	4	—
G. NORTHERN				
Ord. ....	6	2½	4½	—
G. SOUTHERN				
Ord. ....	13½	8	10½	—
Pref. ....	26	10	22½	—
Guar. ....	40½	22	33½	—
Deb. ....	57	45½	52½	—

## Irish Traffic Returns

IRELAND		Totals for 13th Week			Totals to Date			
		1940	1939	Inc. or Dec.	1940	1939	Inc. or Dec.	
Belfast & C.D. (80 miles)	pass.	£ 4,654	£ 1,651	+	£ 3,003	£ 28,625	+	£ 7,421
	goods	406	482	—	76	6,130	—	589
	total	5,060	2,133	+	2,927	34,755	+	8,010
Great Northern (543 miles)	pass.	15,000	7,700	+	7,300	127,300	+	18,800
	goods	9,050	12,850	—	3,800	142,900	+	10,300
	total	24,050	20,550	+	3,500	270,200	+	29,100
Great Southern (2,076 miles)	pass.	38,808	28,990	+	9,818	385,730	+	20,586
	goods	38,729	43,108	—	4,379	542,312	+	8,183
	total	77,537	72,098	+	5,439	928,042	+	28,769
L.M.S.R. (N.C.C.) (271 miles)	pass.	5,820	3,190	+	2,630	53,860	+	14,420
	goods	2,840	3,570	—	730	42,900	+	6,020
	total	8,660	6,760	+	1,900	96,760	+	20,440

Easter Monday, 1940

## RAILWAY AND OTHER REPORTS

**San Paulo (Brazilian) Railway Co. Ltd.**—The directors recommend a dividend of 2½ per cent. free of tax on the ordinary stock for the year 1939. For 1938 the payment was 2 per cent. tax free.

**Mariano & Havana Railway Co. Ltd.**—Net profit for the year 1939 was £3,409 and £6,083 was brought in. The directors recommend a final dividend of 2 per cent. less tax making 3 per cent. and carry forward £6,493.

**Erie Railroad.**—Net revenue from operations in 1939 was \$21,844,453 (\$13,405,778) less tax accruals \$6,761,856 (\$6,800,470), leaving \$15,082,596 (\$6,605,308). Deduct net rents \$3,618,460 (\$3,390,979) and add other income, \$1,120,867 (\$1,009,076), giving total income \$12,585,002 (\$4,223,405). Deduct fixed charges, etc., net deficit is \$1,449,521 (\$10,777,793).

**Kassala Railway Co. Ltd.**—The directors of this railway, which is worked by the Sudan Government, report a profit for the year 1939 of £54,634, compared with £62,913 for 1938. Net profit after debenture interest (£51,100) and fees (£1,123) is £2,411, against £8,044. The debit balance carried forward is £231,031, compared with £233,442.

**Detroit & Mackinac Railway Company.**—During the year 1939 freight revenues decreased \$11,661 to \$748,955 and passenger revenues fell \$1,171 to \$30,302. Total operating revenues were \$1,047 lower at \$876,809. Operating expenses increased by \$13,063 to \$643,663. Net earnings after taxes amounting to \$43,708, were \$189,437 against \$212,367 for 1938.

**Sharpness Docks.**—The report for 1939 of the Sharpness Docks & Gloucester & Birmingham Navigation Company shows that receipts amounted to £101,749 and expenditure to £63,490, leaving a balance of £38,259, compared with £42,995 for 1938. The total quantity of goods imported was 769,084 tons, compared with 700,432 tons in 1938, and exports 28,480 tons, compared with 45,747 tons. No dividend is recommended on the "C" preference stock which for 1938 received 5 per cent. or on the ordinary stock, which was paid 1 per cent. a year ago.

**Lehigh Valley Railroad Company.**—Gross operating revenue for the year 1939 was \$45,358,986, an increase of 10 per cent. compared with 1938 and operating expenses at \$32,792,245 was higher by 4 per cent. The operating ratio was 72 per cent. against 76 per cent. Anthracite coal freight revenue rose \$111,749 to \$13,687,146 and merchandise freight revenue by \$3,831,660 to \$25,698,540. Total income was \$3,160,186 higher at \$7,945,813. Deductions from income, comprising such items as rents, and interest on funded debt, amounted to \$8,004,369, giving a

deficit of \$58,556 compared with a deficit of \$3,280,613 for 1938.

**Laycock Holdings Limited.**—The directors recommend an interim dividend of 3½ per cent. (same).

**Churchill Machine Tool Co. Ltd.**—The directors recommend a final dividend of 15 per cent., making 30 per cent. for the year 1939 on the larger capital, which compares with 40 per cent. and a capital bonus of 33½ per cent. for the previous year.

**Stewarts and Lloyds Limited.**—The directors recommend a dividend of 12½ per cent. for the year 1939 on the deferred stock. This is the same rate as for 1938 but is payable on £7,779,720 of stock, an increase of £1,899,354 during the year made necessary in connection with the acquisition of the Stanton Ironworks Co. Ltd.

**North British Locomotive Co. Ltd.**—This company shows a net profit for the year 1939 of £144,298 after allowing £20,000 (against nil) for depre-

ciation. This enables the directors to wipe off the debit balance of £48,696 brought in from 1938 and to carry forward £95,602. This decision has been influenced by the uncertainty as to the company's liability for taxation. The dividend on the 5 per cent. preference capital is in arrear from July 1, 1933, and the last payment on the ordinary stock was 2½ per cent. for 1929. The report states that, although the works are relatively well employed, their productive capacity will necessarily be affected by the continued scarcity of skilled labour and the restricted supply of raw materials.

**Craven Bros. (Manchester) Ltd.**—Net trading profit for 1939 amounted to £131,246, compared with £110,824 for 1938. Interest charges take £1,035, war risks insurance £2,503, A.R.P. £6,379, and depreciation reserve £15,000 (against £10,000), leaving a net profit of £106,329 compared with £100,653. As already announced the final dividend is 15 per cent., making 22½ per cent. for the year, the same as for 1938, and the amount to be carried forward is £97,147, against £59,668 brought in.

## CONTRACTS AND TENDERS

The North British Locomotive Co. Ltd. has received an order for 31 spare boilers for the South African Railways & Harbours.

The Gondal Railway has placed the following orders to the inspection of Messrs. Robert White & Partners:—

Vulcan Foundry Limited: 8 locomotive fly cranks.

Linley & Co. Ltd.: 2 copper tube and back plates.

The Bengal-Nagpur Railway has placed the following orders:—

Beyer, Peacock & Co. Ltd.: Loco. steam and exhaust pipes.

Talbot Stead Tube Co. Ltd.: 3,262 boiler tubes, and 350 flue tubes.

The South Indian Railway has placed the following orders to the inspection of Messrs. Robert White & Partners:—

North British Locomotive Co. Ltd.: Two pairs of locomotive cylinders.

Linley & Co. Ltd.: 19 tube, back, and flat copper plates.

Steel Company of Scotland Limited: 116 loco. tyres.

Dorman Long & Co. Ltd.: 4½ tons of galvanised sheets.

Thomas F. Johnson Limited: 3½ tons of steel nuts; 18,200 incandescent gas mantles, and 4,200 brass mortise locks.

Alfred Wiseman & Co. (1933) Ltd.: 44 rack transmission rims and spur gears.

The Egyptian State Railways has placed the following orders:—

Callender's Cable & Construction Co. Ltd.: Cable (335.G.8/59; £15,459).

Thos. Bolton & Sons Limited: Copper bars (6.378; £229). Cable (335.G.8/56; £19,480).

J. Millikin & Co. Ltd., Belfast: Date nails (4.243; £237).

Metal Traders Limited: Antimony (6.387; £364 f.o.b. Antwerp).

Brooker, Dove & Co. Ltd.: Lead ingots (6.388; £1,269 f.o.b. Antwerp).

British Insulated Cables Limited: Cable (335.G.8/56 half; £10,529).

John Baker & Bessemer Limited has

received an order for 10 pairs of carriage and wagon wheels and axles from the Crown Agents for the Colonies, for use on the Kenya & Uganda Railways.

The Egyptian State Railways are enquiring for the following items:—

300 tons of rapid hardening cement (E.S.R. 361.G.3/45; May 2).

24 tons of black round steel bars (E.S.R. 1.595).

15-ton flat wagons (E.S.R. 17.2/3-5; July 15).

3½ tons of turpentine (E.S.R. 59.356).

The Madras & Southern Mahratta Railway has placed the following orders to the inspection of Messrs. Rendel, Palmer & Tritton:—

Superheater Co. Ltd.: 455 superheater elements.

Howell & Co. Ltd.: 2,847 steel boiler and flue tubes.

Taylor Bros. & Co. Ltd.: 610 steel tyres for locos; 100 steel tyres for carriages and wagons.

Brown Bayley's Steel Works Limited: 10 loco. axles.

The State Electricity Commission of Victoria is enquiring for feed-water plant for Newport C power station, which generates current for the Melbourne suburban railways (D.O.T. No. TY. 17684/40; April 30).

The Great Western Railway is enquiring for tenders for the widening and reconstruction of Spwdrws bridge, near Trimsaran Road, Carmarthenshire. Particulars from the Chief Engineer, at Paddington; April 15.

For the promotion of Anglo-Spanish commercial relations, the Anglo-Hispano Trading Company has been formed, and a Director of the company is shortly to visit Spain to discuss the present and future requirements of the country, with especial reference to manufactures, electrical plant, and locomotives.



## Railway Stock Market

The extension of the war by Germany to Norway and Denmark had no serious repercussions on the stock and share markets. As was to be expected, the volume of business, which had remained small owing to the tendency to await the Budget changes, was further reduced, and at the outset prices were marked down sharply. When it became apparent that no heavy selling was likely to develop, markets displayed a firmer tone, and sentiment tended to be influenced by the trend in British Funds. Where changed, home railway debenture stocks showed only fractional movements, and bearing in mind surrounding conditions on the Stock Exchange, the undertone in guaranteed and senior preference stocks was better than might have been expected. As a precautionary measure, quotations were widened in many cases, but in no instance were very heavy declines recorded on balance. As was to be expected the junior securities moved down on Tuesday in accordance with general market conditions, but subsequently a firmer tone was in evidence. It is realised that, by reason of the financial agreement with the Government, home railway junior stocks are one of few groups of equity securities whose dividend prospects can be assessed on a sound basis.

Moreover the position in this respect will be further improved if it is decided to publish grouped receipts at regular intervals. As regards preference and guaranteed stocks it is apparent that many recent purchasers, attracted by the generous yields, are prepared to hold for more than a short period.

In fact, as compared with a week ago, L.M.S.R. 4 per cent. 1923 preference was fractionally higher at 54. The senior preference, however, reacted from 65 to 64, but the 4 per cent. guaranteed kept at 90, while the 5 per cent. debentures remained at 107, and at 99½ the 4 per cent. debentures more than held the improvement recorded recently. In recent weeks there has been a good measure of speculative activity in the junior stocks of the main-line railways, and as was to be expected, they have moved closely with the day-to-day tendency of the Stock Exchange. On balance L.M.S.R. ordinary declined from 24 to 22½, while there was a reaction from 49½ to 47½ in Great Western ordinary stock. Among other securities of the last-named company, the 4 per cent. debentures were maintained at 104, and the 5 per cent. preference stock at 100½.

Southern deferred moved down from 22 to 20½, and the preferred from 70½

to 69½. The guaranteed stock at 113½ lost a point, but the 5 per cent. preference remained at 100½ and the 4 per cent. debentures at 103. On balance L.N.E.R. first preference at 52 showed a loss of half-a-point, while the second preference was 20, compared with 20½ a week ago. As to the first guaranteed, the price at 79½ was lower, and the second guaranteed at 72½ also showed a loss of a point. Whereas L.N.E.R. 4 per cent. debentures were unchanged at 95, the 3 per cent. debentures were 72½, compared with 72 a week ago, London Transport "C" stock at 45½ more than held the improvement recorded last week.

In accordance with the surrounding market tendency, Argentine and most other foreign railway securities were lower, but in many instances quotations did not appear adequately tested by business. B.A. Gt. Southern 4 per cent. debentures were 65, and Central Argentine 4 per cent. debentures 64. Whereas Nitrate Rails shares lost part of their recent improvement, San Paulo was higher at 47, compared with 43 a week ago, in advance of the dividend decision. Antofagasta preference also showed improvement. Lower prices ruled for Canadian Pacific shares and preference stock.

### Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1939-40	Week Ending	Traffic for Week		No. of Weeks	Aggregate Traffic to Date			Shares or Stock	Prices			
				Total this year	Inc. or Dec. compared with 1939		Totals		Increase or Decrease		Highest 1939	Lowest 1939	April 9, 1940	Yield % (See Note)
							This Year	Last Year						
South & Central America	Antofagasta (Chili) & Bolivia	834	31.3.40	£ 27,490	+ £ 11,130	13	£ 56,240	£ 183,210	+ £ 73,030	Ord. Stk.	10½	4½	11 Nil	
	Argentine North Eastern	753	30.3.40	ps. 143,200	- ps. 11,400	40	ps. 5,928,600	ps. 6,142,000	- ps. 213,400	"	4½	2½	3½ Nil	
	Bolivar	174	Mar. 1940	4,370	- 230	13	11,590	11,700	- 110	6 p.c. Deb.	7½	5½	7 Nil	
	Brazil	2,801	30.3.40	ps. 1,720,000	- ps. 152,000	40	ps. 53,951,000	ps. 55,211,000	- ps. 1,260,000	Bonds.	5½	4½	7 Nil	
	Buenos Ayres & Pacific	190	2.3.40	£ 76,100	+ £ 5,800	36	£ 3,559,600	£ 3,744,800	+ £ 185,200	Ord. Stk.	5½	2	4 Nil	
	Buenos Aires Central	5,082	30.3.40	ps. 2,720,000	+ ps. 51,000	40	ps. 93,314,000	ps. 92,207,000	+ ps. 1,107,000	Mt. Deb.	14	8	13½ Nil	
	Buenos Ayres Gt. Southern	1,930	30.3.40	ps. 924,000	- ps. 55,000	40	ps. 30,749,000	ps. 28,643,000	+ ps. 2,106,000	Ord. Stk.	13½	4½	8 Nil	
	Buenos Ayres Western	3,700	30.3.40	ps. 1,717,500	- ps. 458,000	40	ps. 69,432,800	ps. 74,951,700	- ps. 5,518,900	"	10½	4	7 Nil	
	Central Argentine	972	30.3.40	23,610	+ 3,579	40	827,679	731,656	+ 96,023	"	11½	4	4 Nil	
	Do.	188	Jan. 1940	11,360	- 5,266	31	119,201	155,492	- 36,291	Ord. Stk.	24½	18	22 Nil	
	Costa Rica	70	Feb. 1940	10,500	- 2,300	8	22,700	26,100	- 3,400	I Mt. Db.	104½	102	102½ Nil	
	Dorada	810	30.3.40	ps. 218,800	- ps. 42,400	40	ps. 9,436,300	ps. 10,016,900	- ps. 580,600	Ord. Stk.	6	3	3½ Nil	
	Entre Rios	1,016	30.3.40	10,500	+ 200	13	170,000	146,700	+ 23,300	Ord. Sh.	3/-	1/2½	1½ Nil	
	Great Western of Brazil	794	Feb. 1940	\$604,831	+ \$55,394	8	\$1,170,321	\$1,097,710	+ \$72,611	"	—	—	— Nil	
	International of Cl. Amer.	223	Mar. 1940	7,370	+ 955	13	21,975	15,820	+ 6,155	Ist Pref.	7½	7½	1½ Nil	
	Interoceanic of Mexico	1,918	30.3.40	22,467	- 207	13	294,067	270,866	+ 23,201	Ord. Stk.	7	6½	7 Nil	
	La Guaira & Caracas	483	14.3.40	\$296,000	- \$18,200	10	\$3,307,600	\$3,259,800	+ \$47,800	"	1½	1	1 Nil	
	Leopoldina	319	Feb. 1940	12,749	+ 3,448	35	80,695	73,867	+ 6,828	"	2½	1	1 Nil	
	Mexican	386	31.3.40	8,124	+ 1,343	13	50,333	32,995	+ 17,338	Ord. Sh.	2½	1½	2½ Nil	
	Midland of Uruguay	274	30.3.40	\$3,780,000	+ \$707,000	40	\$125,198,000	\$120,319,000	+ \$4,879,000	Pr. Li. Stk.	45½	36	40 Nil	
Nitrate	1,059	Mar. 1940	74,738	+ 5,140	40	606,651	609,165	- 2,514	Pref.	1½	1½	3 Nil		
Paraguay Central	100	9.3.40	c25,722	- c8,028	37	c676,235	c776,714	- c100,479	Pr. Li. Db.	19½	16	15 Nil		
Peruvian Corporation	153½	24.3.40	34,565	+ 2,051	12	397,280	340,282	+ 56,998	Ord. Stk.	38	20	47½ Nil		
Salvador	160	Feb. 1940	2,330	- 680	35	20,130	23,795	- 3,665	Ord. Sh.	1	6/6	1½ Nil		
San Paulo	1,353	30.3.40	39,875	+ 4,231	40	892,687	913,154	- 20,467	Ord. Stk.	2	2	2 Nil		
Talca	73	Feb. 1940	1,155	+ 378	35	8,543	8,246	+ 297	Deb. Stk.	2	2	2 Nil		
United of Havana	23,695	31.3.40	1,174,467	+ 179,320	13	10,674,823	8,239,488	+ 2,435,334	"	74½	60	79 Nil		
Uruguay Northern	17,167	31.3.40	722,000	+ 23,200	13	7,127,600	5,869,200	+ 1,258,400	Perp. Dbs. 4 p.c. Gar.	100½ 78	76 3½	101½ 9 Nil		
Canada	Canadian National	1,329	10.3.40	44,917	- 1,012	50	1,492,313	1,442,051	+ 50,262	Ord. Stk.	76½	60	79½ Nil	
	Canadian Northern	202	20.3.40	3,352	+ 457	51	123,330	133,102	- 9,772	Ord. Sh.	56½	50½	45 Nil	
India	Grand Trunk	2,096	20.3.40	90,312	+ 12,641	24	1,367,842	1,382,987	- 15,145	Ord. Stk.	277	229½	280 Nil	
	Canadian Pacific	161	20.3.40	3,483	+ 121	51	137,496	144,452	- 6,956	"	91	84½	214½ Nil	
	Assam Bengal	3,267	10.3.40	256,650	+ 47,262	50	7,652,170	6,663,932	+ 988,238	"	94½	83½	95½ Nil	
	Barsi Light	2,986	31.3.40	285,000	- 8,925	52	9,109,725	8,914,050	+ 195,675	"	108	90	107½ Nil	
	Bengal & North Western	2,967	20.3.40	192,525	+ 22,292	51	5,693,326	5,482,018	+ 211,308	"	104½	92	102½ Nil	
	Bengal Doars & Extension	571	20.3.40	21,494	+ 2,946	24	289,053	260,587	+ 28,466	"	280	263	280 Nil	
	Bengal-Nagpur	2,531½	10.3.40	112,310	+ 2,515	50	3,866,164	3,858,548	+ 7,616	"	102½	88	92½ Nil	
	Bombay, Baroda & Cl. India	204	Jan. 1940	74,624	-	17	294,262	294,262	-	"	—	—	— Nil	
	Madras & Southern Mahratta	623	10.3.40	5,545	- 381	50	203,467	204,422	- 955	Prf. Sh.	1	1	1 Nil	
	Rohilkund & Kumaon	1,625	May 1939	206,557	- 11,295	21	1,220,870	1,309,332	- 88,462	"	55	39	48½ Nil	
Various	South Indian	277	Jan. 1940	13,729	+ 1,218	31	90,657	107,233	- 16,576	B. Deb.	91½	87½	84 Nil	
	Midland of W. Australia	1,900	10.2.40	57,055	+ 8,329	46	1,734,997	1,849,245	- 114,248	Inc. Deb.	55	39	48½ Nil	
	Nigerian	2,442½	Jan. 1940	384,405	-	17	1,520,480	1,520,480	-	"	—	—	— Nil	
	Rhodesia	13,288	16.3.40	640,692	+ 11,073	50	32,609,902	31,210,108	+ 1,399,794	"	—	—	— Nil	
	South Africa	4,774	Dec., 1939	943,915	+ 84,727	26	4,838,002	4,733,741	+ 104,261	"	—	—	— Nil	
	Victoria	—	—	—	—	—	—	—	—	—	—	—	— Nil	

Note. Yields are based on the approximate current prices and are within a fraction of ½. Argentine traffics are now given in pesos. † Receipts are calculated @ 1s. 6d. to the rupee. § ex dividend